HITACHI
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SERVICE MANUAL

PA **No. 0225**

P42H401 / DW3-U
P42T501 / DW3-U
P42H4011 / DW3-U

NTSC
ATSC

DW3-U
CHASSIS

R/C: CLU-4371A	**p/n HL02401**	**P42T501**
R/C: CLU-4371UG2	**p/n HL02075**	**P42H401**
R/C: CLU-4372UG2	**p/n HL02075**	**P42H4011**

SERVICE MANUAL REVISION HISTORY INFORMATION

DATE	REVISION #	REASON
Mar. 08, 2007	*SM00001*	*FIRST ISSUE OF MANUAL*
Oct. 29, 2007	CH1	Digital Main PWB reference (Page 113)
Oct. 29, 2007	CH2	Updated Troubleshooting Flowchart (Page 54)
Oct. 29, 2007	CH2	Updated LED Diagnostics (Page 57)
Oct. 30, 2007	CH3	Updated Terminal PWB p/n (Page 111) (Page 70)
Oct. 30, 2007	CH3	Updated Terminal PWB p/n (Page 107) (Page 113)
Oct. 30, 2007	CH3	Updated Control PWB p/n (Page 113)
Oct. 30, 2007	CH3	Updated SD PWB p/n (Page 113)
Oct. 31, 2007	CH4	Added Remote Control Info. How to enter Service Menu (Page 115)
Nov, 06, 2007	CH5	Added In-Depth Video Troubleshooting Flowchart (Page 116)
Nov, 06, 2007	CH5	Added In-Depth Audio Troubleshooting Flowchart (Page 121)
Nov, 15, 2007	CH7	Added Power Supply Picture and Vs/Va adjustment Info. (Page 42)
Dec, 11, 2007	CH8	Added Panel PWB Part Numbers (Page 112)
Jan, 02, 2007	CH9	Corrected Panel Troubleshooting Block Diagram (Page 125)
Jan, 02, 2007	CH9	Added In-Depth 42AE1 Panel Troubleshooting Flowchart (Page 123)
Jan, 08, 2007	CH10	Corrected Front Bezel (F Cosmetics) Part Numbers (Page 77)
Feb, 07, 2008	CH11	Added Digital Module Block Diagram (Page 60-A)

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT

Version 0225-11
02/07/08

PLASMA DISPLAY PANEL

MARCH 2007

HHEA-MANUFACTURING DIVISION

HITACHI
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PA No. 0225

SERVICE MANUAL

P42H401 / DW3-U
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R/C: CLU-4371UG2	p/n HL02075	P42H401
R/C: CLU-4372UG2	p/n HL02076	P42H4011
R/C: CLU-4371A	p/n HL02401	P42T501

TO GO TO A CHAPTER, CLICK ON ITS HEADING BELOW

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CAUTION: These servicing instructions are for use by qualified service personnel only. To reduce the risk of Electric shock do not perform any servicing other than that contained in the operating instructions Unless you are qualified to do so. Before servicing this chassis, it is important that the service Technician read the “IMPORTANT SAFETY INSTRUCTIONS” in this service manual.

SAFETY NOTICE
USE ISOLATION TRANSFORMER WHEN SERVICING

Components having special safety characteristics are identified by a ⚠ on the schematics and on the parts list in this Service Data and its supplements and bulletins. Before servicing the chassis, it is important that the service technician Read and follow the “Important Safety Instructions” in this Service Manual.

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT

PLASMA DISPLAY PANEL

MARCH 2007

HHEA-MANUFACTURING DIVISION

SAFETY PRECAUTIONS

NOTICE: Comply with all cautions and safety-related notes located on or inside the cover case and on the chassis or plasma module.

WARNING: Since the chassis of this receiver is connected to one side of the AC power supply during operation, whenever the receiver is plugged in service should not be attempted by anyone unfamiliar with the precautions necessary when working on this type of receiver.

1. When service is required, an isolation transformer should be inserted between power line and the receiver before any service is performed on a “HOT” chassis receiver.
2. When replacing a chassis in the receiver, all the protective devices must be put back in place, such as barriers, non-metallic knobs, insulating cover-shields, and isolation resistors, capacitors, etc.
3. When service is required, observe the original lead dress.
4. Always use manufacturer’s replacement components. Critical components as indicated on the circuit diagram should not be replaced by another manufacturer’s. Furthermore, where a short circuit has occurred, replace those components that indicate evidence of over heating.
5. Before returning a serviced receiver to the customer, the service technician must thoroughly test the unit to be certain that it is completely safe to operate without danger of electrical shock, and be sure that no protective device built into the receiver by the manufacturer has become defective, or inadvertently defeated during servicing.

Therefore, the following checks should be performed for the continued protection of the customer and service technician.

Leakage Current Cold Check

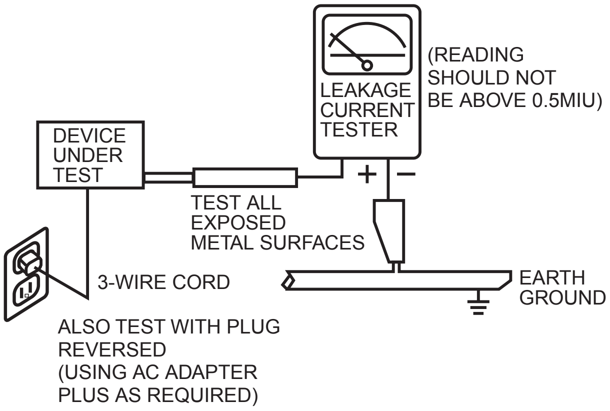
With the AC plug removed from the 120V AC 60Hz source, place a jumper across Line 1 and Line 2 of the three plug prongs, do not connect with the third prong, which is physical ground.

Using an insulation tester (DC500V), connect one of its leads to the AC plug jumper and touch with the other lead each exposed metal part (antennas, screwheads, metal overlays, control shafts, etc.), particularly any exposed metal part having a return path to the chassis should have a resistor reading over 4MΩ. Any resistance value below this range indicates an abnormality which requires corrective action. An exposed metal part not having a return path to the chassis will indicate an open circuit.

Leakage Current Hot Check

Plug the AC line cord directly into a 120V AC outlet. (Do not use an isolation transformer during this test.) Use a leakage current tester or a metering system that complies with the American National Standards Institute (ANSI) C101.0 Leakage Current for Appliances. In the case of the PDP monitor set the AC switch first in the ON position and then in the OFF position, measure from across Line 1 and Line 2 of the three plug prongs, do not connect with the third prong, which is physical ground, to all exposed metal parts of the instrument (antennas, handle bracket, metal cabinet, screw heads, metallic overlays, control shafts, etc.), especially any exposed metal parts that offer an electrical return path to the chassis. Any current measured must not exceed 0.5 MIU. Reverse the instrument power cord plug in the outlet and repeat test.

AC LEAKAGE TEST


LEAKAGE CURRENT TESTER
(READING SHOULD NOT BE ABOVE 0.5MIU)
DEVICE UNDER TEST
+
−
TEST ALL EXPOSED METAL SURFACES
3-WIRE CORD
EARTH GROUND
ALSO TEST WITH PLUG REVERSED (USING AC ADAPTER PLUS AS REQUIRED)

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE RECEIVER TO THE CUSTOMER.

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PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in HITACHI television receivers have special safety-related characteristics. These are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified with a ⚠ mark in the schematics and parts list in this Service Manual.

The use of a substitute replacement component which does not have the same safety characteristics as the HITACHI-recommended replacement component, shown in the parts list in this Service Manual, may create shock, fire, X-radiation, or other hazards.

Product safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current HITACHI Service Manual. A subscription to, or additional copies of HITACHI Service Manuals may be obtained at a nominal charge from HITACHI Sales Corporation.

1. Follow the general caution recommendations from “Safety precautions” section.

P42H401/P42T501/P42H4011 - Plasma Monitor Unit

1. Follow the general caution recommendations from “Safety precautions” section.
2. Since the Panel module and front filter are made of glass, sufficient care shall be taken when handling the broken module and filter in order to avoid injury.
3. If necessary to replace Panel module, this work must be started after the panel module and the AC/DC Power supply becomes sufficiently cool.
4. Special care must be taken with the display area to avoid damaging its surface.
5. The Panel Module shall not be touched with bare hands to protect its surface from stains.
6. It is recommended to use clean soft gloves during the replacing work of the Panel module in order to protect, not only the display area of the panel module but also the serviceman.
7. The Chip Tube of the panel module (located upper left of the back of the panel module) and flexible cables connecting Panel glasses to the drive circuitry Printed Wiring Boards (P.W.B.) are very weak, so sufficient care must be taken to prevent breaking or cutting any of these. If the Chip Tube breaks the panel module will never work, replacement for a new plasma panel module will be needed.
8. AV Digital Block, power supply and PDP driving circuit P.W.B.’s are assembled on the rear side of the PDP module, take special care with this fragile circuitry; particularly, Flexible Printed Circuits bonded to surrounding edges of the glass panel. They are not strong enough to withstand harsh outer mechanical forces. Avoid touching the flexible printed circuits by not only your hands, but also tools, chassis, or any other object. Extreme bending of the connectors must be avoided too. In case the flexible printed circuits are damaged, the corresponding addressed portions of the screen will not be lit and exchange of a glass panel will be required.

PDP Module Handling

When there is need to replace a broken PDP module which is the displaying device from the Plasma monitor unit, consider the following:

1. When carrying the PDP module, two persons should stand at both shorter-edge sides of the glass-panel and transport it with their palms. Avoid touching the Flexible Printed Circuits or the chip tube on the corner of the glass-panel. Handle only by the surface of the glass panel. In case of some PDP modules, electrode repair is done by connecting between regular terminal with Cu tape and Cu wire. Please do not hook and/or damage this repair line. If it is damaged, the module will not function unless the glass-panel is exchanged with a new glass-panel.
2. When carrying PDP module, watch surrounding objects, such as tables, and also do not carry it alone since it may be dangerous and it will be damaged due to excessive stress to the module (glass-panel).
3. Please do not stand the module with the edge of the glass-panel on the table since this might result in damage to the glass-panel and/or flexible printed circuits due to excessive stress to the module (glass-panel).

WARNING

Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health and Safety Code, Section 25249.5).

When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with solder. Also, when soldering make sure you are in a well ventilated area in order to avoid inhalation of any smoke or fumes released.

SAFETY NOTICE
USE ISOLATION TRANSFORMER
WHEN SERVICING

POWER SOURCE

This plasma television is designed to operate on 120 Volts 60Hz, AC house current. Insert the power cord into a 120 Volts 60Hz outlet.

NEVER CONNECT THE PLASMA TELEVISION TO OTHER THAN THE SPECIFIED VOLTAGE OR TO DIRECT CURRENT AND TO 50HZ. TO PREVENT ELECTRIC SHOCK, DO NOT USE THE PLASMA TELEVISION’S (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE, OR THE OUTLETS UNLESS THE BLADES AND GROUND TERMINAL CAN BE FULLY UNSERTED TO PREVENT BLADE EXPOSURE.

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SERVICING PRECAUTIONS

CAUTION: Before servicing instruments covered by this service data and its supplements and addenda, read and follow the “Important Safety Instructions” on page 3 of this publication.

NOTE: If unforeseen circumstances create conflict between the following servicing precautions and any of the safety precautions on page 3 of this publication, always follow the safety precautions. Remember: Safety First.

General Servicing Guidelines

1. Always unplug the instrument AC power cord from the AC power source before:
   a. Removing or reinstalling any component, circuit board, module, or any other instrument assembly.

   b. Disconnecting or reconnecting any instrument electrical plug or other electrical connection.

   c. Connecting a test substitute in parallel with an electrolytic capacitor in the instrument.

   CAUTION: A wrong part substitution or incorrect polarity installation of electrolytic capacitors may result in an explosion hazard.

2. Do not spray chemicals on or near this instrument or any of its assemblies.

3. Unless specified otherwise in these service data, clean electrical contacts by applying the following mixture to the contacts with a pipe cleaner, cotton-tipped stick or comparable nonabrasive applicator: 10% (by volume) Acetone and 90% (by volume) isopropyl alcohol (90%-99% strength).
   CAUTION: This is a flammable mixture. Unless specified otherwise in these service data, lubrication of contacts is not required.

4. Do not defeat any plug/socket of voltage interlocks with which instruments covered by this service data might be equipped.

5. Do not apply AC power to this instrument and/or any of its electrical assemblies unless all solid-state device heat-sinks are correctly installed.

6. Always connect the test instrument ground lead to the appropriate instrument chassis ground before connecting the test instrument positive lead. Always remove the test instrument ground lead last.

7. Use with this instrument only the test fixtures specified in this service data.
   CAUTION: Do not connect the test fixture ground strap to any heatsink in this instrument.

Electrostatically Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor “chip” components. The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed for potential shock reasons prior to applying power to the unit under test.

2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.

3. Use only a grounded-tip soldering iron to solder or desolder ES devices.

4. Use only an anti-static type solder removal device. Some solder removal devices not classified as “anti-static” can generate electrical charges sufficient to damage ES device.

5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.

6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material.)

7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.
   CAUTION: Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device.)

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General Soldering Guidelines

1. Use a grounded-tip, low-wattage soldering iron and appropriate tip size and shape that will maintain tip temperature within the range 500°F to 600°F.

2. Use an appropriate lead free solder (see page 8). Lead solder can be used, but there is a possibility of failure due to insufficient strength of the solder.

3. Keep the soldering iron tip clean and well-tinned.

4. Thoroughly clean the surfaces to be soldered. Use a small wire-bristle (0.5 inch or 1.25 cm) brush with a metal handle. Do not use freon-propelled spray-on cleaners.

5. Use the following desoldering technique.
   a. Allow the soldering iron tip to reach normal temperature (500°F to 600°F).

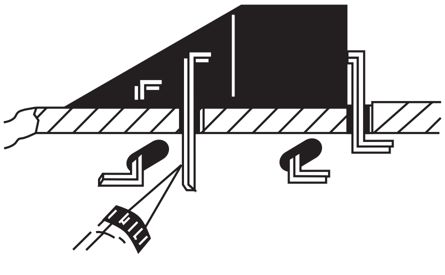
   b. Heat the component lead until the solder melts. Quickly draw away the melted solder with an anti-static, suction-type solder removal device or with solder braid.
   CAUTION: Work quickly to avoid overheating the circuit board printed foil.

6. Use the following soldering technique.
   a. Allow the soldering iron tip to reach normal temperature (500°F to 600°F).

   b. First, hold the soldering iron tip and solder strand against the component lead until the solder melts.

   c. Quickly move the soldering iron tip to the junction of the component lead and the printed circuit foil, and hold it there only until the solder flows onto and around both the component lead and the foil.
   CAUTION: Work quickly to avoid overheating the circuit board printed foil or components.

   d. Closely inspect the solder area and remove any excess or splashed solder with a small wire-bristle brush.



Use Soldering Iron to Pry Leads

IC Removal/Replacement

Some Hitachi unitized chassis circuit boards have slotted holes (oblong) through which the IC leads are inserted and then bent flat against the circuit foil. When holes are the slotted type, the following technique should be used to remove and replace the IC. When working with boards using the familiar round hole, use the standard technique as outlined in paragraphs 5 and 6 above.

Removal

1. Desolder and straighten each IC lead in one operation by gently prying up on the lead with the soldering iron tip as the solder melts.

2. Draw away the melted solder with an anti-static suction-type solder removal device (or with solder braid) before removing the IC.

Replacement

1. Carefully insert the replacement IC in the circuit board.

2. Carefully bend each IC lead against the circuit foil pad and solder it.

3. Clean the soldered areas with a small wire-bristle brush. (It is not necessary to reapply acrylic coating to areas.)

“Small-signal” Discrete Transistor Removal/Replacement

1. Remove the defective transistor by clipping its leads as close as possible to the component body.

2. Bend into a “U” shape the end of each of the three leads remaining on the circuit board.

3. Bend into a “U” shape the replacement transistor leads.

4. Connect the replacement transistor leads to the corresponding leads extending from the circuit board and crimp the “U” with long nose pliers to insure metal to metal contact, then solder each connection.

Power Output Transistor Devices Removal/Replacements

1. Heat and remove all solder from around the transistor leads.

2. Remove the heatsink mounting screw (if so equipped).

3. Carefully remove the transistor from the circuit board.

4. Insert new transistor in circuit board.

5. Solder each transistor lead, and clip off excess lead.

6. Replace heatsink.

Diode Removal/Replacement

1. Remove defective diode by clipping its leads as close as possible to diode body.

2. Bend the two remaining leads perpendicularly to the circuit board.

3. Observing diode polarity, wrap each lead of the new diode around the corresponding lead on the circuit board.

4. Securely crimp each connection and solder it.

5. Inspect (on the circuit board copper side) the solder joints of the two “original leads”. If they are not shiny, reheat them and, if necessary, apply additional solder.

Fuses and Conventional Resistor Removal/Replacement

1. Clip each fuse or resistor lead at top of circuit board hollow stake.

2. Securely crimp leads of replacement component around stake 1/8 inch from top.

3. Solder the connections.

   CAUTION: Maintain original spacing between the replaced component and adjacent components and the circuit board, to prevent excessive component temperatures.

Circuit Board Foil Repair

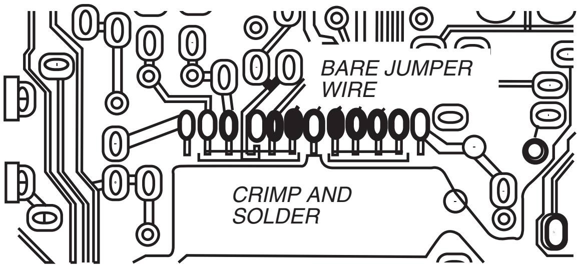
Excessive heat applied to the copper foil of any printed circuit board will weaken the adhesive that bonds the foil to the circuit board, causing the foil to separate from, or "lift-off," the board. The following guidelines and procedures should be followed whenever this condition is encountered.

In Critical Copper Pattern Areas
High component/copper pattern density and/or special voltage/current characteristics make the spacing and integrity of copper pattern in some circuit board areas more critical than in others. The circuit foil in these areas is designated as Critical Copper Pattern. Because Critical Copper Pattern requires special soldering techniques to ensure the maintenance of reliability and safety standards, contact your Hitachi personnel.

At IC Connections
To repair defective copper pattern at IC connections, use the following procedure to install a jumper wire on the copper pattern side of the circuit board. (Use this technique only on IC connections.)

1. Carefully remove the damaged copper pattern with a sharp knife. (Remove only as much copper as absolutely necessary.)

2. Carefully scratch away the solder resist and acrylic coating (if used) from the end of the remaining copper pattern.

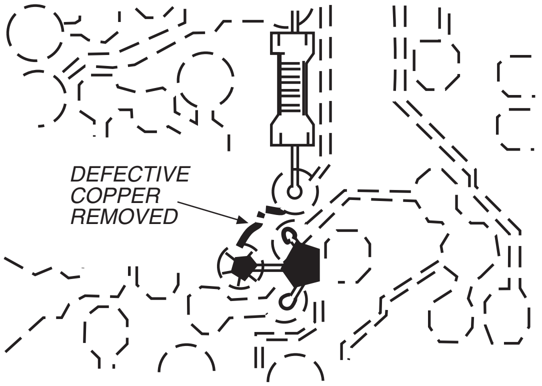


Install Jumper Wire and Solder

3. Bend a small "U" in one end of a small-gauge jumper wire and carefully crimp it around the IC pin. Solder the IC connection.

4. Route the jumper wire along the path of the cut-away copper pattern and let it overlap the previously scraped end of the good copper pattern. Solder the overlapped area, and clip off any excess jumper wire.

At Other Connections
Use the following technique to repair defective copper pattern at connections other than IC Pins. This technique involves the installation of a jumper wire on the component side of the circuit board.



Insulated Jumper Wire

1. Remove the defective copper pattern with a sharp knife. Remove at least 1/4 inch of copper, to ensure hazardous condition will not exist if the jumper wire opens.

2. Trace along the copper pattern from both wire sides of the pattern break and locate the nearest component directly connected to the affected copper pattern.

3. Connect insulated 20-gauge jumper wire from the nearest component on one side of the pattern break to the lead of the nearest component on the other side. Carefully crimp and solder the connections.

   CAUTION: Be sure the insulated jumper wire is dressed so that it does not touch components or sharp edges.

NOTE: ***These components are affixed with glue. Be careful not to break or damage any foil under the component or at the pins of the ICs when removing. Usually applying heat to the component for a short time while twisting with tweezers will break the component loose.***

Leadless Chip Components (surface mount)

Chip components must be replaced with identical chips due to critical foil track spacing. There are no holes in the board to mount standard transistors or diodes. Some chip capacitor or resistor board solder pads may have holes through the board, however the hole diameter limits standard resistor replacement to 1/8 watt. Standard capacitors may also be limited for the same reason. It is recommended that identical chip components be used. .

Chip resistors have a three digit numerical resistance code -1st and 2nd significant digits and a multiplier. Example: 162 = 1600 or 1.6KΩ resistor, 0 = 0Ω (jumper).

Chip capacitors generally do not have the value indicated on the capacitor. The color of the component indicates the general range of the capacitance.

Chip transistors are identified by a two letter code. The first letter indicates the type and the second letter, the grade of transistor.

Chip diodes have a two letter identification code as per the code chart and are a dual diode pack with either

common anode or common cathode. Check the parts list for correct diode number.

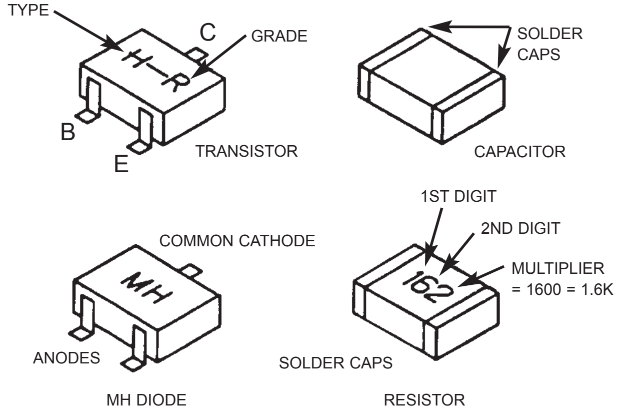
Component Removal

1. Use solder wick to remove solder from component end caps or terminals.
2. Without pulling up, carefully twist the component with tweezers to break the adhesive.
3. Do not reuse removed leadless or chip components since they are subject to stress fracture during removal .

Chip Component Installation

1. Put a small amount of solder on the board soldering pads.
2. Hold the chip component against the soldering pads with tweezers or with a miniature alligator clip and apply heat to the pad area with a 30 watt iron until solder flows. Do not apply heat for more than 3 seconds

Chip Components

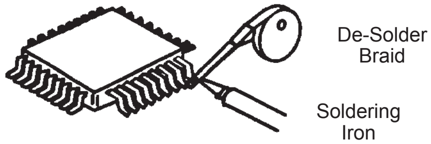

TYPE
C
GRADE
H—R
B
E
TRANSISTOR
SOLDER CAPS
CAPACITOR
COMMON CATHODE
MH
ANODES
MH DIODE
1ST DIGIT
2ND DIGIT
MULTIPLIER = 1600 = 1.6K
162
SOLDER CAPS
RESISTOR

How to Replace Flat-IC

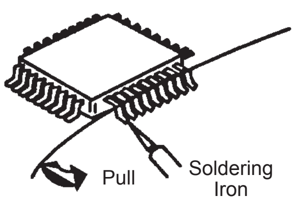
—Required Tools—

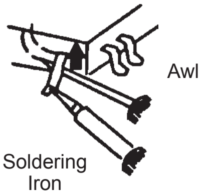
- Soldering iron
- De-solder braids
- iron wire or small awl
- Magnifier

1. Remove the solder from all of the pins of a Flat-IC by using a de-solder braid.

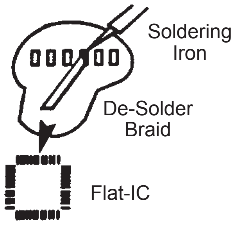

De-Solder Braid
Soldering Iron

2. Put the iron wire under the pins of the Flat-IC and pull it in the direction indicated while heating the pins using a soldering iron. A small awl can be used instead of the iron wire.

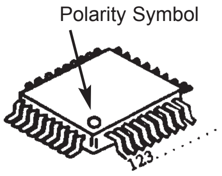

Iron Wire
Pull
Soldering Iron


Awl
Soldering Iron

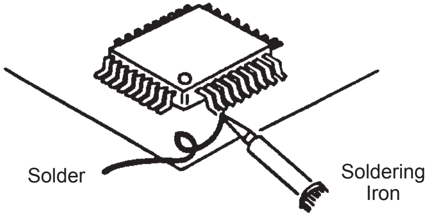
3. Remove the solder from all of the pads of the Fiat-IC by using a de-solder braid.


Soldering Iron
De-Solder Braid
Flat-IC

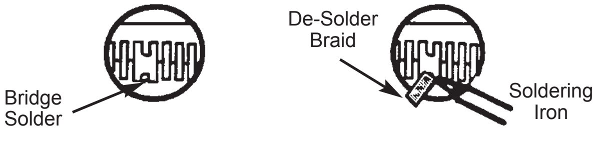
4. Position the new Flat-IC in place (apply the pins of the Flat-IC to the soldering pads where the pins need to be soldered). Properly determine the positions of the soldering pads and pins by correctly aligning the polarity symbol.


Polarity Symbol
123

5. Solder all pins to the soldering pads using a fine tipped soldering iron.


Solder
Soldering Iron

6. Check with a magnifier for solder bridge between the pins or for dry joint between pins and soldering pads. To remove a solder bridge, use a de-solder braid as shown in the figure below.


Bridge Solder
De-Solder Braid
Soldering Iron

Information for service about lead-free solder introduction

Hitachi introduced lead-free solder to conserve the "Earth Environment".
Please refer to the following before servicing.

(1) Characteristic of lead-free solder

Melting point of lead free solder is 40-50°C higher than solder containing lead.

(2) Solder for service

Following composition is recommended.

" Sn - 3.0Ag - 0.5Cu " , or " Sn - 0.7 Cu "

Lead solder can be used, but there is a possibility of failure due to insufficient strength of the solder.

Caution when using solder containing lead.

Please remove previous solder as much as possible from the soldering point.
When soldering, please perfectly melt the lead-free solder to mix well with the previous solder.

(3) Soldering iron for lead-free solder.

Melting point of lead-free solder is higher than solder containing lead.
Use of a soldering tool "with temperature control" and "with much thermal capacitance" is recommended.
(Recommended temperature control : 320°C - 450°C)

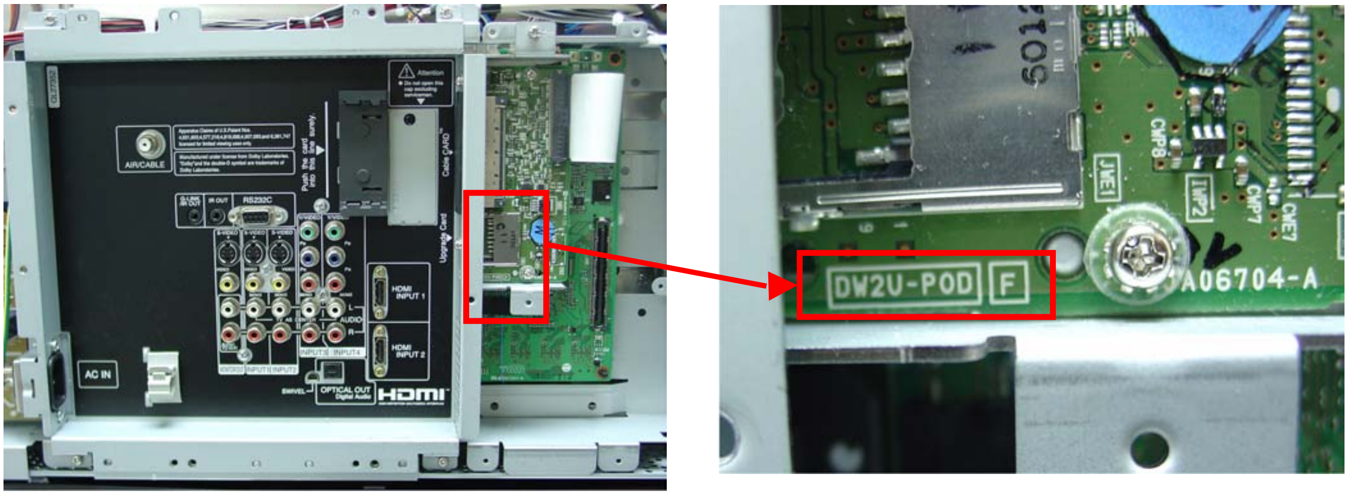
Recommended temperature

PWB with chip parts	320°C +/- 30°C
PWB without chip parts	380°C +/- 30°C
Chassis, metal, shield etc.	420°C +/- 30°C

(4) Identification of lead-free PWB

2004 models	>> lead-free solder is introduced
2007 models	>> lead-free solder apply

On lead-free PWB, "F" is added at the beginning of stamp on PWB. (e.g. DW2-POD F)



AGENCY REGULATORY INFORMATION

Federal Communications Commission Notice

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/television technician for help.

FCC Information

This device complies with part15 of the FCC Rules.Operation is subject to the following two conditions : (1) This decide may not cause harmful interference and (2) This decide must accept any interference received, including interference that may cause undesired operation.

Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Hitachi America ,Ltd. Home Electronics Division may void the user’s authority to operate the equipment.

Cables

Connections to this device must be made with shielded cables with metallic RFI/EMI connector hoods to maintain compliance with FCC Rules and Regulations.

Any cables that are supplied with the system must be replaced with identical cables in order to assure compliance with FCC rules. Order Hitachi spares as replacement cables.

Note

This Plasma Television receiver will display television closed captioning, (CC or 🗨), in accordance with paragraph 15.119 and 15.122 of the FCC rules.

INDUSTRY CANADA AGENCY REGULATORY INFORMATION

Cable Compatible Television Apparatus- Tèlèvision câblocompatible, Canada.

TABLE OF CONTENTS

ACKNOWLEDGMENTS AND TRADEMARKS

This Plasma Television complies with VESA DDC2B specifications, Plug & Play is a system with computer, peripherals (including monitors) and operating system. It works when the monitor is connected to a DDC ready computer that is running an operating system software that is capable for the plug & play.

When a Plug and Play PC is powered on, it sends a command to the Monitor requesting identification. The Monitor sends back a string of data including its characteristics.

TRADEMARK ACKNOWLEDGMENT

DDC™ is a trademark of Video Electronics Standard Association.
IBM PC/AT and VGA are registered trademarkds of International Business Machines Corporation of the U.S.A.
Apple and Macintosh are registered trademarks of Apple Computer, Inc.
VESA is a trademark of a nonprofit organization, Video Electronics Standard Association.

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Cable Compatible Television Apparatus- Tèlèvision câblocompatible, Canada.

Notes on Closed Caption:
This Plasma Television receiver will display television closed captioning, (CC or 🗨), in accordance with paragraph 15.119 and 15.122 of the FCC rules.

**Manufactured under license from Dolby Laboratories. "Dolby" and the double-D symbol are trademarks of Dolby Laboratories.*

TABLE OF CONTENTS

INTRODUCTION

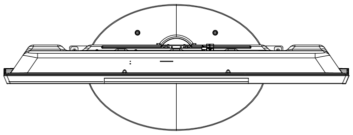
The Digital AV Block is inside of the Panel assembly controls most of the user functions of the complete TV set and conditions the signal to the plasma panel.

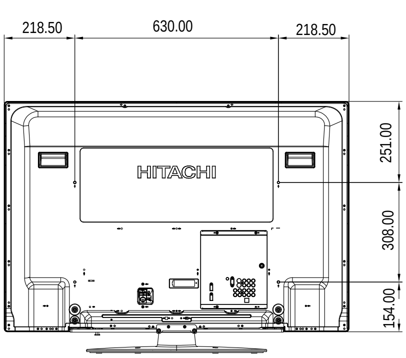
The 42” monitor contains the displaying device, which is the plasma display panel module, and the driving circuitry, which receives the signal from the Digital AV Block and after processing, delivers the image to the display module.

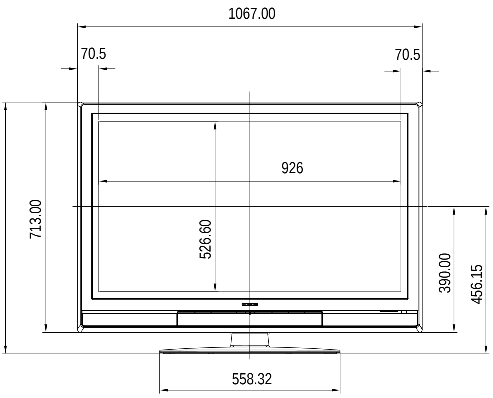
This HITACHI Service Manual is intended for the qualified service personnel and it contains the necessary information for troubleshooting the Plasma television set in case of malfunction.

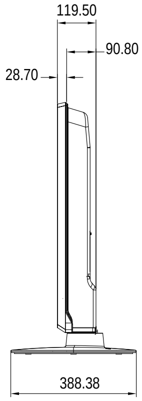
DIMENSIONS:

P42H401/P42T501/P42H4011









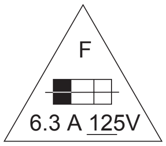
POWER RATINGS:

		Indicated Value			PST(W)		
		Max Rating		Average Rating (W)	Without POD. less than 1W	With POD. less than 14W	
No.	Model Name	(W)	(A)				Chassis
1	P42H401/T501 P42H4011	356W	3.0A	220W	0.6W	-------	DW3C

CIRCUIT PROTECTION

CAUTION: Below is an EXAMPLE only. See Replacement Parts List for details. The following symbol near the fuse indicates fast operation fuse (to be replaced). Fuse ratings appear within the symbol.

Example:



6.3A/125V

“RISK OF FIRE - REPLACE FUSE AS MARKED”

The rating of fuse F9A2 is 6.3 A - 125V.
Replace with the same type fuse for continued protection against fire.

SPECIFICATIONS

FEATURES

2007 42" Plasma models

Model			P42H401/P42T501/P42H4011		
Dimension	Size		1	1067mm x 779.15mm x 388.38mm	
	Weight		2	36.5 Kg	
A/C Input Voltage	Input AC Voltage		3	AC108V~132V (with 3 Plug AC Power Cord inlet type ,1.8m length)	
	Input AC Frequency		4	60Hz	
	Power Consumption		5	356W, SBY less than 1W	
Front End	Front End(NTSC & ATSC)		6	ENGD6305 NTSC/ATSC(8VSB),64QAM,256QAM)	
	Available Channel		7	2~13	VHP
			8	14 ~ 69	UHF
			9	A-5~A-1,A~W,W+1~W+94	CATV
Input Signal	Video Signal		10	NTSC	
	Component Signal		11	480i, 480p, 720p,1080i	
	HDMI Signal		12	480i, 480p, 720p, 1080i, 1080p (EIA-861B)	*1)
Picture	Y/C Separation		13	3D Y/C (ON fix)	
	Line Correction		14	No	
	I-P Conversion		15	Motion Adaptive & Multi Angle Interpolation	
	Picture Mode		16	Day(Dynamic), Day(Normal),Night	
Sound Enhancement			17	BassBoost (On,Off) & Surround (Normal, Wide, Off)	
Adjustment	Settings for Video Signal		18	Picture Mode, Contrast, Brightness, Color, Tint, Sharpness Color Temperature, Black Enhancement, Contrast Mode, Noise Reduction, MPEG-NR, Auto Movie Mode, Aspect, Black Side Panel.	
	Settings for Sound		19	Volume, Balance, Bass, Treble, Audio Source, Internal Speakers, Auto Noise Cancel, Perfect Volume, Mute, Soft Mute, Loudness, DRC.	
General Function	PinP Mode	Split	20	With(ANT/CABLE DIGITAL CHANNEL & Video 480i ,720p, 1080i)	Only P50T501 model
		Freeze	21	With(3Pix:only ANT/CABLE DIGITAL CHANNEL, Video, 480i).	
	Wide Mode		22	7 Mode	
	Aspect	Video Selection	23	4:3 Standard/16:9 Standard1 /16:9 Standard 2 4:3 Expanded/Zoom1/Zoom 2/16:9 Zoom	
	Film Theater		24	With(Auto Movie Mode:On/Off)	
	Color Temperature		25	3 Mode (High/Medium/Standard)	
	Input Signal Selection		26	Input1/2/3/Front, Cable/ Air,HDMI1/2/Front,Photo Input	Photo Input only P50T501

*1) When HDMI input a 1080p signal, the length of the cable should be less than 5 meters.

SPECIFICATIONS

FEATURES (continued)

Model			P42H401/P42T501/P42H4011	
General Function	Gamma Correction	27	Only for Service Menu	
	Picture Enhancer	28	-	
	Input Signal Identification	29	yes	
	Audio Special Mode	30	No	
	Power Save Mode	31	With (On/Off) (Video In)	LED Normal: Blue Power Save: Orange Stand by: Red
	Burning Protection	32	With (Raster Shift:3 option.All White Pattern)	
	OSD Language (VIDEO)	33	ENGLISH, FRANCAIS, ESPAÑOL	
	Swivel	34	H401: Fix, T501 : Manual Swivel	
R/C Handset		35	CLU-4371UG2 (P50H401)/CLU-4372UG2 (P50H4011)/CLU-4371A (P50T501)	HOSHIDEN/PANASONIC
In/Out Terminal	Composite Video Input (Input 1~3, Front)	36	4 Input: RCA pin* 5 (1 Input Front Panel)	
	S-In(S2 Terminal) (Video/S are common selector, priority is S-In) .	37	1 Input: Mini Din-4P x 2	
	Component Signal Input (Input 2, Input 3)	38	3 Input:RCA pin x 9(Y of input 1/2/5 is common input for Composit e-In)	
	Digital Input(HDM I-HDCP)	39	3 Input:HDMI(19P)X3	
	Audio In (L/R) (Lch:mono)	40	4 Input:RCApinx8	
	Auto Link	41	1 Input (Input 3 LINK)	Auto Link Function
	Video Control Terminal (BS)	42	No	
	U/V Ant Input	43	CABLE / AIR	
	BS-I/F Input	44	No	
	Video Monitor Out Terminal	45	1 Output: RCA pin x 1	
	Audio Output Terminal	46	1 Output L/R:RCA pinx 2	
	Audio Monitor Out Terminal	47	1 Output L/R:RCA pinx 2 (common input for No.60)	
	RS-232C Terminal	48	1 (Female type)	
	Photo Input	49	1 (On Front panel)	P50T501 model only
	Audio Optical Output	50	1 (Square type)	
Front Key	Main Power Switch	51	Yes , below panel	
	Power On/off Switch	52	Yes, on Front panel	
	IR Receiving Unit	53	Yes, on Front panel	
	Power Indicator LED	54	Yes, on Front panel	
	Menu Control Key	55	Yes, on Front panel (Channel Up/Down, Volume Up/Down, Audio/Video Input Select , Menu Select)	
Option	POP TV Stand	56	With	
	Wall Mount Unit	57	With	

FEATURES & DIFFERENCES BETWEEN 42" MODELS

Model Name	Class	Chassis	Series Name	Cabinet Design	Aspect	ATSC	ATSC/NTSC 1Tuner	QAM Basic Digital Cable	POD	MPEG Decoder	EPG Gemstar	M/C
P42H401	H401	DW3C	UltraVision	Al Black/Frame,US Silver/Bezel,Black/SP	16x9	X	X	X	-	X	-	SD
P42T501	T501	DW3C	Cineform	Al Black/Frame,Al Black/Bezel,Al Black/SP	16x9	X	X	X	-	X	-	SD
P42H4011	H4011	DW3C	UltraVision	Al Black/Frame,US Black/Bezel,Black/SP	16x9	X	X	X	-	X	-	SD

Model Name	Class	DTV NTSC FORMAT	Seine	3/2 Pulldown	Fill Mode	Memory by inputs	Shield	Comb Filter	Resolution	OSD	Color Temp
P42H401	H401	1080i	Seine2	Auto/off	7modes	X	36% mesh	3DYC	1024x1080	07 OSD B	3Mode(High, Med,Std)
P42T501	T501	1080i	Seine2	Auto/off	7modes	X	31% mesh	3DYC	1024x1080	07 OSD C	3Mode(High, Med,Std)
P42H4011	H4011	1080i	Seine2	Auto/off	7modes	X	36% mesh	3DYC	1024x1080	07 OSD B	3Mode(High, Med,Std)

Model Name	Class	PIP	AV NET	Remote			IR Pass Thru	Discrete Code	Dolby	Sound function		
				Type	Source Color	Simple UEI				Perfect Volume	Surround	BassBoost
P42H401	H401	----	-	TVU	Hoshiden/Silver	-	-	X	AC3 Downmix	×	×	×
P42T501	T501	Digital Tuner/Ext SPLIT	-	TVU	PANA/Black	-	-	X	AC3 Downmix	×	×	×
P42H4011	H4011	----	-	TVU	Hoshiden/Black	-	-	X	AC3 Downmix	×	×	×

Model Name	Class	TV Center	Output Watt	Speaker	Rear Jacks												
					Digital I/F		RS232C	IR-Out	YPbPr	S IN	AV IN	S OUT	V OUT	AUDIO OUT	Y As Composite	6CH OUT	RF
					IEEE1394	HDMI											
P42H401	H401	L/mono	20	2FR	-	2	1	-	2(1H,2H,2.14H)	1	3	1	1	1	X	OPT	1
P42T501	T501	L/mono	20	2FR	-	2	1	-	2(1H,2H,2.14H)	1	3	1	1	1	X	OPT	1
P42H4011	H4011	L/mono	20	2FR	-	2	1	-	2(1H,2H,2.14H)	1	3	1	1	1	X	OPT	1

Model Name	Class	Front Jacks			
		Composite	L/R	HDMI	Y,Pb,Pr
P42H401	H401	1	1	1	-
P42T501	T501	1	1	1	-
P42H4011	H4011	1	1	1	-

Model Name	Class	Power LED	Downloadable V Chip	Energy Star	PLC	Option Wall mount	Swivel	Table Top Stand	Hotel Mode	Adjust Color Decoder	Color Manage	Contrast Mode
P42H401	H401	Blue	X	X	X	X	Fixed	× BLK(9000)	×	-	-	X
P42T501	T501	Blue	X	X	X	X	Manual	× SIL(9000)	×	-	-	X
P42H4011	H4011	Blue	X	X	X	X	Fixed	× BLK(9000)	×	-	-	X

General Specifications

Model Specifications

Model Name Item		P42H401/P42T501/P42H4011
Destination		U.S.A. / CANADA
Exterior	Cabinet Dimensions (Main Body) (Speaker & stand inclusive)	1067mm x 779.15mm x 388.38mm
	Frame Color Screen	Metallic Black (T501/H4011) Brightness Silver (H401)
	Stand	Inclusive
	Weight (Main Body) (Speaker & stand inclusive) (Main Body: Packed)	29.5 kg (36.5 kg) 47.5 kg
Display Panel	Screen Size	921.6×523.8mm H401/H4011 930.82×523.8mm T501
	Resolution	1024x1080 pixels
	Dot Pitch (H)	0.900mm
	Dot Pitch (V)	0.485mm
Front Filter	Surface Finishing	0.4ohm Mesh
Brightness	Peak Brightness (1% window)	350 (320) cd/m^2 or more (When VIDEO, Day Dynamic mode, Color temperature 'HIGH',Input Signal Amplitude 100 % is set) (P42T501)
	All White Pattern	50 cd/m^2 or more
Contrast	Contrast ratio	800 : 1 (typ)
Audio Output	Audio Output	10W+ 10W(5ohm>,10%Distortion)
Panel Operation	Main Power Switch	PUSH (LOCK) 1 switch
	Power Switch	PUSH (NON-LOCK) 1 switch
Input Terminal	Video/Audio Input	RCA, HDMI, S
Output Terminal	Audio Line Output	RCA
Power Supply Source	Connector	3 Polarity Receptacle
	Input Voltage	Single Phase AC108-132V, 60 Hz

Environment Specifications

NO	Item	Specification
1	Operating Temp.	+5℃~+35°C
2	Stock Temp.	-15℃~+60℃
3	Operating Humidity	20%~80%RH
4	Stock Humidity	20%~90%RH
5	Operating Atmosphere Pressure	700~1114h Pa (1888m~-757m)
6	Stock Atmosphere Pressure	300~1114h P a (4727m~-757m)
7	Warranty Gravity Vertical	0.85 G
8	Warranty Drop High	30cm
9	Tilt Angle	12° Over

9. Display Specification

9.1 Picture Format for Each Input Source
Aspect, Vertical Position, Black Side Panel, PIP Mode

9.1.1 Aspect

Yes : Selectable — : Un-selectable

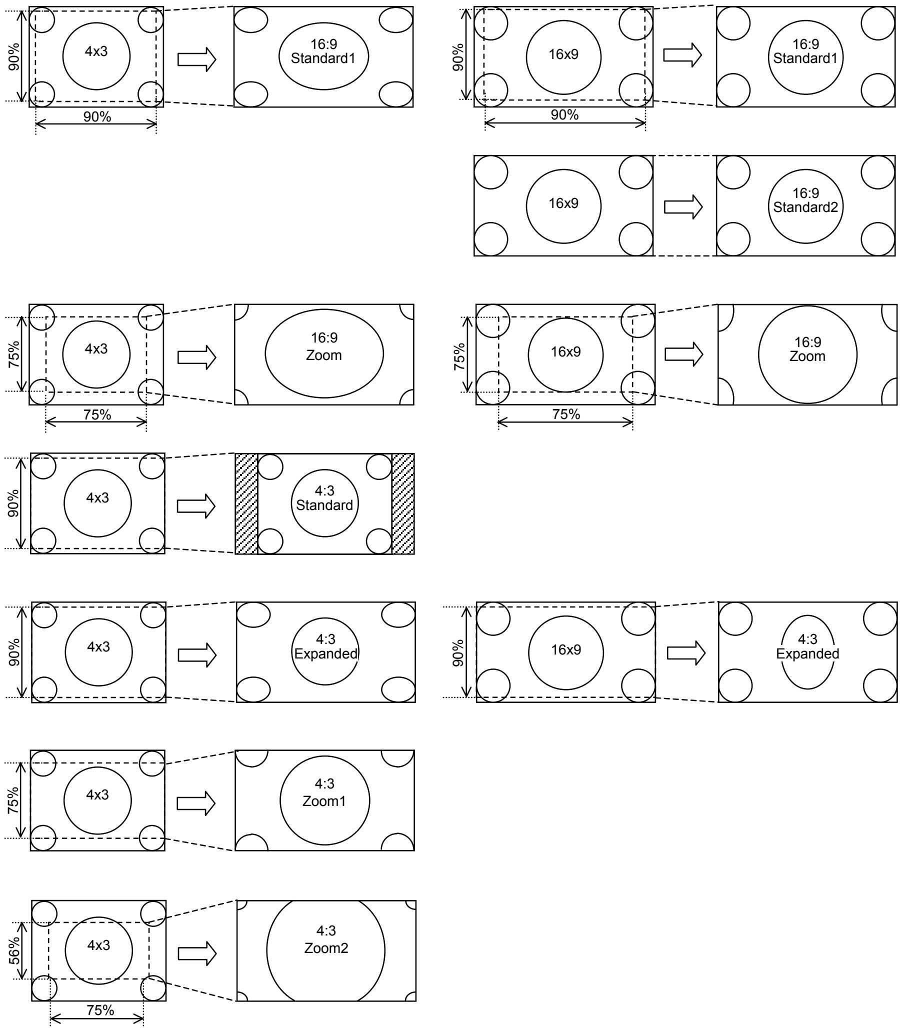
Input Signal			Auto Aspect	Aspect Video ID	Aspect						
					16:9 Standard 1	16:9 Standard 2	16:9 Zoom	4:3 Standard	4:3 Expanded	4:3 Zoom 1	4:3 Zoom 2
ANT Analog	Video	NTSC	—	4x3	Yes	—	Yes	Yes	Yes	Yes	Yes
ANT Digital	$\mathrm{YC_BC_R}$	480p 480i	—	16x9	Yes	—	Yes	—	Yes	—	—
			—	4x3	—	—	—	Yes	Yes	Yes	Yes
	$\mathrm{YP_BP_R}$	1080i/720p	—	16x9	Yes	Yes	Yes	—	Yes	—	—
Input 1	Video S-Video	NTSC	Auto ON	16x9	Yes Initial	—	Yes	—	—	—	—
				Letter	—	—	—	Yes	Yes	Yes Initial	Yes
				4x3	—	—	—	Yes	Yes Initial	Yes	Yes
				No ID	Yes	—	Yes	Yes	Yes	Yes	Yes
			Auto OFF	—	Yes	—	Yes	Yes	Yes	Yes	Yes
Input 2	$\mathrm{YP_BP_R}$	1080i/720p	—	16x9	Yes	Yes	Yes	—	Yes	—	—
		480p 480i	Auto ON	16x9	Yes Initial	—	Yes	—	—	—	—
				Letter	—	—	—	Yes	Yes	Yes Initial	Yes
				4x3	—	—	—	Yes	Yes Initial	Yes	Yes
				No ID	Yes	—	Yes	Yes	Yes	Yes	Yes
			Auto OFF	—							
		No Signal	—	—							
	Video	NTSC	Auto ON	16x9	Yes Initial	—	Yes	—	—	—	—
				Letter	—	—	—	Yes	Yes	Yes Initial	Yes
				4x3	—	—	—	Yes	Yes Initial	Yes	Yes
				No ID	Yes	—	Yes	Yes	Yes	Yes	Yes
			Auto OFF	—	Yes	—	Yes	Yes	Yes	Yes	Yes
Input 3	$\mathrm{YP_BP_R}$	1080i/720p	—	16x9	Yes	Yes	Yes	—	Yes	—	—
		480p 480i	Auto ON	16x9	Yes Initial	—	Yes	—	—	—	—
				Letter	—	—	—	Yes	Yes	Yes Initial	Yes
				4x3	—	—	—	Yes	Yes Initial	Yes	Yes
				No ID	Yes	—	Yes	Yes	Yes	Yes	Yes
			Auto OFF	—							
		No Signal	—	—							
	Video	NTSC	Auto ON	16x9	Yes Initial	—	Yes	—	—	—	—
				Letter	—	—	—	Yes	Yes	Yes Initial	Yes
				4x3	—	—	—	Yes	Yes Initial	Yes	Yes
				No ID	Yes	—	Yes	Yes	Yes	Yes	Yes
			Auto OFF	—							
Input Front	Video	NTSC	Auto ON	16x9	Yes Initial	—	Yes	—	—	—	—
				Letter	—	—	—	Yes	Yes	Yes Initial	Yes
				4x3	—	—	—	Yes	Yes Initial	Yes	Yes
				No ID	Yes	—	Yes	Yes	Yes	Yes	Yes
			Auto OFF	—							

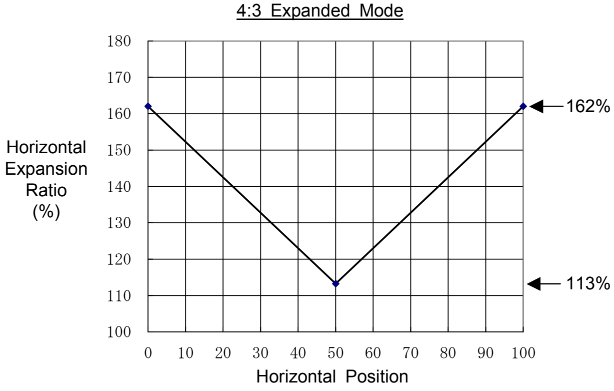
（Continuation）

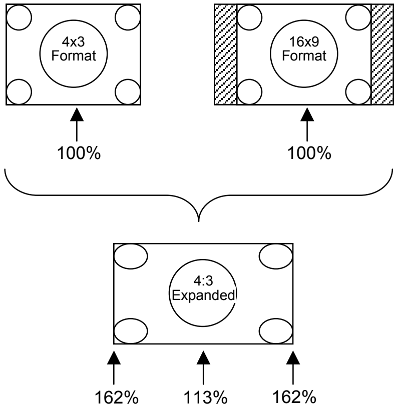
Input Signal			Auto Aspect	Aspect Video ID	Aspect						
					16:9 Standard 1	16:9 Standard 2	16:9 Zoom	4:3 Standard	4:3 Expanded	4:3 Zoom 1	4:3 Zoom 2
HDMI1 (Input1 -DVI)	HDMI (DVI)	1080p/ 1080i/720p	—	16x9	Yes	Yes	Yes	—	Yes	—	—
		480p 480i	Auto ON	16x9	Yes Initial	—	Yes	—	—	—	—
				Letter	—	—	—	Yes	Yes	Yes Initial	Yes
				4x3	—	—	—	Yes	Yes Initial	Yes	Yes
				No Info	Yes	—	Yes	Yes	Yes	Yes	Yes
			Auto OFF	—							
HDMI2 (Input2 -DVI)	HDMI (DVI)	1080p/ 1080i/720p	—	16x9	Yes	Yes	Yes	—	Yes	—	—
		480p 480i	Auto ON	16x9	Yes Initial	—	Yes	—	—	—	—
				Letter	—	—	—	Yes	Yes	Yes Initial	Yes
				4x3	—	—	—	Yes	Yes Initial	Yes	Yes
				No Info	Yes	—	Yes	Yes	Yes	Yes	Yes
			Auto OFF	—							
HDMI Front (InputFront -DVI)	HDMI (DVI)	1080p/ 1080i/720p	—	16x9	Yes	Yes	Yes	—	Yes	—	—
		480p 480i	Auto ON	16x9	Yes Initial	—	Yes	—	—	—	—
				Letter	—	—	—	Yes	Yes	Yes Initial	Yes
				4x3	—	—	—	Yes	Yes Initial	Yes	Yes
				No Info	Yes	—	Yes	Yes	Yes	Yes	Yes
			Auto OFF	—							
Horizontal Expansion				16x9	105%	100%	133%	—	133%	—	—
				4x3	105%	100%	133%	75%	100%	100%	133%
Vertical Expansion					105%	100%	133%	110%	110%	133%	176%

[Expansion]

<4x3 Format> <16x9 Format>

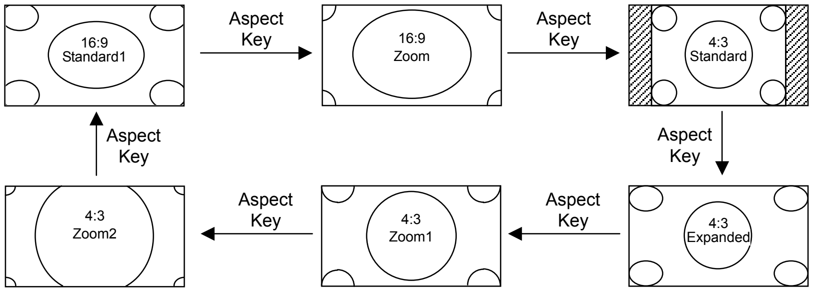

90%
4x3
90%
16:9
Standard1
90%
16x9
90%
16:9
Standard1
16x9
16:9
Standard2
75%
4x3
75%
16:9
Zoom
75%
16x9
75%
16:9
Zoom
90%
4x3
4:3
Standard
90%
4x3
4:3
Expanded
90%
16x9
4:3
Expanded
75%
4x3
4:3
Zoom1
56%
4x3
75%
4:3
Zoom2




4x3
Format
16x9
Format
100%
100%
4:3
Expanded
162%
113%
162%

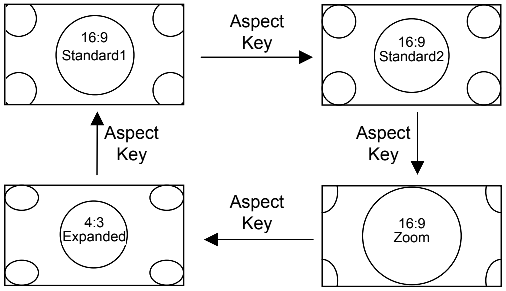
9.1.2 Aspect Key Operation

(1) ANT Analog Channel


16:9
Standard1
Aspect Key
16:9
Zoom
Aspect Key
4:3
Standard
Aspect Key
4:3
Expanded
Aspect Key
4:3
Zoom1
Aspect Key
4:3
Zoom2
Aspect Key

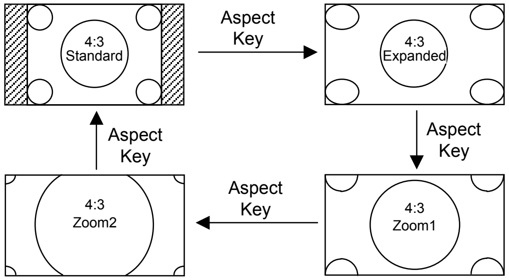
(2) ANT Digital Channel

(a) Aspect: 16x9

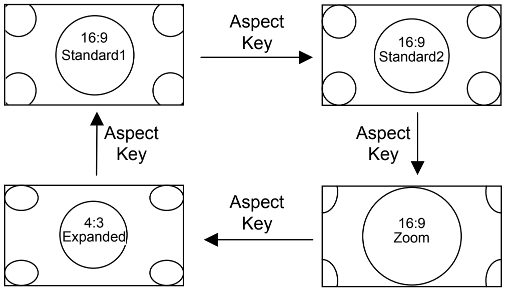

16:9
Standard1
Aspect Key
16:9
Standard2
Aspect Key
16:9
Zoom
Aspect Key
4:3
Expanded
Aspect Key

(This mode is for 1080p/1080i/720p only.)

(b) Aspect: 4x3

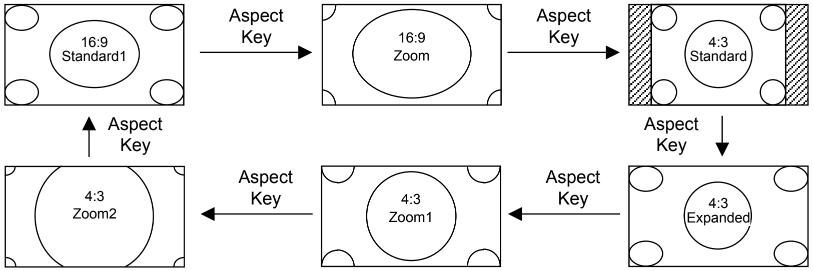

4:3
Standard
Aspect Key
4:3
Expanded
Aspect Key
4:3
Zoom1
Aspect Key
4:3
Zoom2
Aspect Key

(3) HDMI/YPBPR: 1080p/1080i/720p


16:9
Standard1
Aspect Key
16:9
Standard2
Aspect Key
16:9
Zoom
Aspect Key
4:3
Expanded
Aspect Key

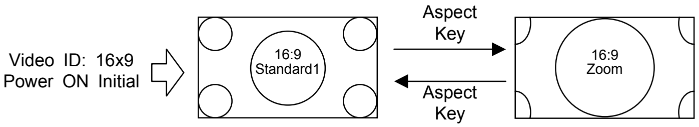
(4) HDMI/YPBPR: 480p/480i, Video/S-Video

(4-1) Auto Aspect OFF

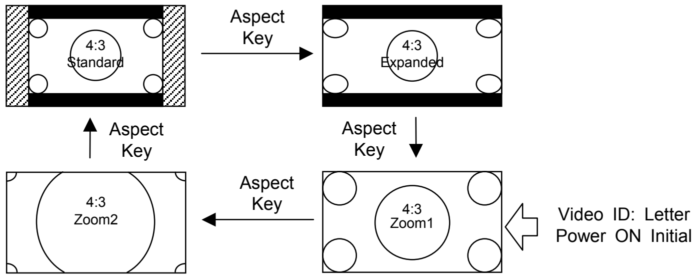

16:9
Standard1
Aspect Key
16:9
Zoom
Aspect Key
4:3
Standard
Aspect Key
4:3
Expanded
Aspect Key
4:3
Zoom1
Aspect Key
4:3
Zoom2
Aspect Key

(4-2) Auto Aspect ON

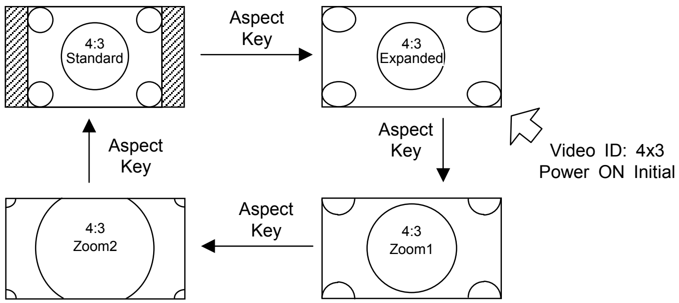
(a) Video ID/HDMI Info: 16x9


Video ID: 16x9
Power ON Initial
16:9
Standard1
Aspect Key
16:9
Zoom
Aspect Key

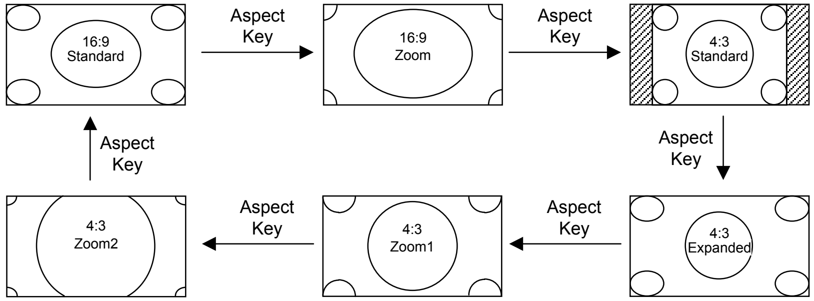
(b) Video ID/HDMI Info: Letter


4:3
Standard
Aspect
Key
4:3
Expanded
Aspect
Key
Aspect
Key
4:3
Zoom2
Aspect
Key
4:3
Zoom1
Video ID: Letter
Power ON Initial

(c) Video ID/HDMI Info: 4x3


4:3
Standard
Aspect
Key
4:3
Expanded
Aspect
Key
Video ID: 4x3
Power ON Initial
Aspect
Key
4:3
Zoom2
Aspect
Key
4:3
Zoom1

(d) No Video ID, No HDMI Info

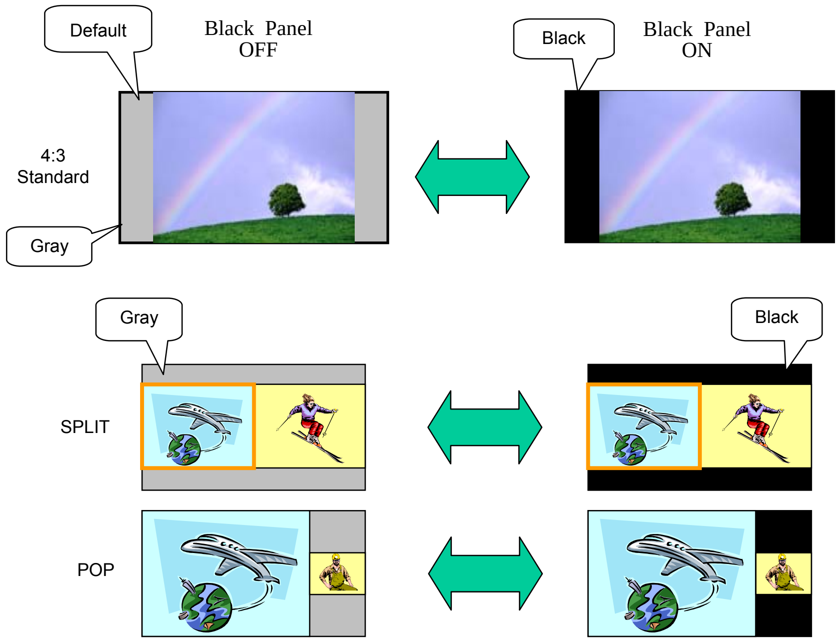

16:9
Standard
Aspect
Key
16:9
Zoom
Aspect
Key
4:3
Standard
Aspect
Key
Aspect
Key
4:3
Zoom2
Aspect
Key
4:3
Zoom1
Aspect
Key
4:3
Expanded

9.1.3 Vertical Position Operation

Input				Vertical Position					
				16:9 Standard1/2	16:9 Zoom	4:3 Standard	4:3 Expanded	4:3 Zoom 1	4:3 Zoom 2
ANT Analog	Video	NTSC	4x3	±0 step Gray out	±10 step (±30 lines)	±0 step Gray out	±10 step (±10 lines)	±10 step (±30 lines)	±10 step (±50 lines)
ANT Digital	YPBPR	1080i 720p	16x9	±0 step Gray out	±10 step (±30 lines)	—	±10 step (±10 lines)	—	—
		480p	4x3	—	—	±0 step Gray out	±10 step (±10 lines)	±10 step (±30 lines)	±10 step (±50 lines)
		480i	16x9	±0 step Gray out	±10 step (±30 lines)	—	±10 step (±10 lines)	—	—
			4x3	—	—	±0 step Gray out	±10 step (±10 lines)	±10 step (±30 lines)	±10 step (±50 lines)
Input 1	Video S-Video	NTSC	—	±0 step Gray out	±10 step (±30 lines)	±0 step Gray out	±10 step (±10 lines)	±10 step (±30 lines)	±10 step (±50 lines)
Input 2 - 3	YPBPR	1080i 720p	16x9	±0 step Gray out	±10 step (±30 lines)	—	±10 step (±10 lines)	—	—
		480p 480i	16x9 4x3	±0 step Gray out	±10 step (±30 lines)	±0 step Gray out	±10 step (±10 lines)	±10 step (±30 lines)	±10 step (±50 lines)
	Video	NTSC	—	±0 step Gray out	±10 step (±30 lines)	±0 step Gray out	±10 step (±10 lines)	±10 step (±30 lines)	±10 step (±50 lines)
Input Front	Video	NTSC	—	±0 step Gray out	±10 step (±30 lines)	±0 step Gray out	±10 step (±10 lines)	±10 step (±30 lines)	±10 step (±50 lines)
HDMI1	HDMI	1080p 1080i 720p	16x9	±0 step Gray out	±10 step (±30 lines)	—	±10 step (±10 lines)	—	—
		480p 480i	16x9 4x3	±0 step Gray out	±10 step (±30 lines)	±0 step Gray out	±10 step (±10 lines)	±10 step (±30 lines)	±10 step (±50 lines)
HDMI2	HDMI	1080p 1080i 720p	16x9	±0 step Gray out	±10 step (±30 lines)	—	±10 step (±10 lines)	—	—
		480p 480i	16x9 4x3	±0 step Gray out	±10 step (±30 lines)	±0 step Gray out	±10 step (±10 lines)	±10 step (±30 lines)	±10 step (±50 lines)
HDMI Front	HDMI	1080p 1080i 720p	16x9	±0 step Gray out	±10 step (±30 lines)	—	±10 step (±10 lines)	—	—
		480p 480i	16x9 4x3	±0 step Gray out	±10 step (±30 lines)	±0 step Gray out	±10 step (±10 lines)	±10 step (±30 lines)	±10 step (±50 lines)
PIP Mode	SPLIT/POP/ PIP/STROBE			±0 step Gray out					

9.1.4 Black Side Panel Operation

Model	Input	Aspect			POP/SPLIT/ FREEZE		PIP/STOROBE
		16:9 Standard1 16:9 Standard2 16:9 Standard 16:9 Zoom 4:3 Expanded 4:3 Zoom1 4:3 Zoom2 Full	4:3 Standard Normal Real		Black Side Panel "Off"	Black Side Panel "On"	-
			Black Side Panel "Off"	Black Side Panel "On"			
ALL	480p 1080i/720p	-	Gray	Black	Gray	Black	Gray
	ANT_Analog S-Video/Video 480i	-	Gray	Black	Gray	Black	Gray



9.1.5 PIP Mode

<Available Function on Each Model>

Model		PIP/POP	SPLIT	Freeze
PDP	T Series	-	X	X
	H Series	-	-	-

X: Available, -: Not available

<The Restriction of Main/Sub Source>

Main	Sub	Available or Not	
Digital (Air)	Digital (Air)	-	
Digital (Cable)	Digital (Cable)	-	
Analog (Air)	Analog (Air)	-	
Analog (Cable)	Analog (Cable)	-	
Digital (Air)	Analog (Cable)	-	
Digital (Cable)	Analog (Cable)	-	
Digital (Air)	Analog (Air)	-	
Digital (Cable)	Analog (Air)	-	
Analog (Air)	Analog (Cable)	-	
Analog (Cable)	Analog (Air)	-	
Analog (Air)	Digital (Air)	-	
Analog (Cable)	Digital (Cable)	-	
Analog (Air)	Digital (Cable)	-	
Analog (Cable)	Digital (Air)	-	
Input or HDMI	Input or HDMI	-	
Input or HDMI	Digital (Air)	X	
Input or HDMI	Digital (Cable)	X	
Input or HDMI	Analog (Air)	-	
Input or HDMI	Analog (Cable)	-	
Digital (Air)	Input or HDMI	X	
Digital (Cable)	Input or HDMI	X	
Analog (Air)	Input or HDMI	-	
Analog (Cable)	Input or HDMI	-	

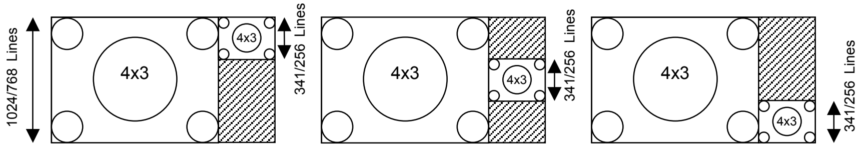
X: Available, -: Not available

PIP Mode	Sub			Digital						Component/Composite/S-IN/HDMI					
				1080i	720p	480p	480p	480i	480i	1080i/p	720p	480p	480p	480i	480i
	Main			16x9	16x9	16x9	4x3	16x9	4x3	16x9	16x9	16x9	4x3	16x9	4x3
POP	Digital (Air or Cable)	1080i	16x9	—	—	—	—	—	—	—	—	—	—	—	—
		720p	16x9	—	—	—	—	—	—	—	—	—	—	—	—
		480p	16x9	—	—	—	—	—	—	—	—	—	—	—	—
		480p	4x3	—	—	—	—	—	—	Yes	Yes	Yes	Yes	Yes	Yes
		480i	16x9	—	—	—	—	—	—	—	—	—	—	—	—
		480i	4x3	—	—	—	—	—	—	Yes	Yes	Yes	Yes	Yes	Yes
	Component Composite S-IN HDMI	1080i/p	16x9	—	—	—	—	—	—	—	—	—	—	—	—
		720p	16x9	—	—	—	—	—	—	—	—	—	—	—	—
		480p	16x9	Yes*1	Yes*1	Yes*1	Yes*1	Yes*1	Yes*1	—	—	—	—	—	—
		480p	4x3	Yes	Yes	Yes	Yes	Yes	Yes	—	—	—	—	—	—
		480i	16x9	Yes*1	Yes*1	Yes*1	Yes*1	Yes*1	Yes*1	—	—	—	—	—	—
		480i	4x3	Yes	Yes	Yes	Yes	Yes	Yes	—	—	—	—	—	—
PIP 16x9	Digital (Air or Cable)	1080i	16x9	—	—	—	—	—	—	Yes	Yes	Yes*2	—	Yes*2	—
		720p	16x9	—	—	—	—	—	—	Yes	Yes	Yes*2	—	Yes*2	—
		480p	16x9	—	—	—	—	—	—	Yes	Yes	Yes*2	—	Yes*2	—
		480p	4x3	—	—	—	—	—	—	—	—	—	—	—	—
		480i	16x9	—	—	—	—	—	—	Yes	Yes	Yes*2	—	Yes*2	—
		480i	4x3	—	—	—	—	—	—	—	—	—	—	—	—
	Component Composite S-IN HDMI	1080i/p	16x9	Yes	Yes	Yes	—	Yes	—	—	—	—	—	—	—
		720p	16x9	Yes	Yes	Yes	—	Yes	—	—	—	—	—	—	—
		480p	16x9	Yes*2	Yes*2	Yes*2	—	Yes*2	—	—	—	—	—	—	—
		480p	4x3	—	—	—	—	—	—	—	—	—	—	—	—
		480i	16x9	Yes*2	Yes*2	Yes*2	—	Yes*2	—	—	—	—	—	—	—
		480i	4x3	—	—	—	—	—	—	—	—	—	—	—	—
PIP 4x3	Digital (Air or Cable)	1080i	16x9	—	—	—	—	—	—	—	—	Yes*1	Yes	Yes*1	Yes
		720p	16x9	—	—	—	—	—	—	—	—	Yes*1	Yes	Yes*1	Yes
		480p	16x9	—	—	—	—	—	—	—	—	Yes*1	Yes	Yes*1	Yes
		480p	4x3	—	—	—	—	—	—	—	—	—	—	—	—
		480i	16x9	—	—	—	—	—	—	—	—	Yes*1	Yes	Yes*1	Yes
		480i	4x3	—	—	—	—	—	—	—	—	—	—	—	—
	Component Composite S-IN HDMI	1080i/p	16x9	—	—	—	Yes	—	Yes	—	—	—	—	—	—
		720p	16x9	—	—	—	Yes	—	Yes	—	—	—	—	—	—
		480p	16x9	—	—	—	Yes*2	—	Yes*2	—	—	—	—	—	—
		480p	4x3	—	—	—	—	—	—	—	—	—	—	—	—
		480i	16x9	—	—	—	Yes*2	—	Yes*2	—	—	—	—	—	—
		480i	4x3	—	—	—	—	—	—	—	—	—	—	—	—
SPLIT	Digital (Air or Cable)	1080i	16x9	—	—	—	—	—	—	Yes	Yes	Yes	Yes	Yes	Yes
		720p	16x9	—	—	—	—	—	—	Yes	Yes	Yes	Yes	Yes	Yes
		480p	16x9	—	—	—	—	—	—	Yes	Yes	Yes	Yes	Yes	Yes
		480p	4x3	—	—	—	—	—	—	Yes	Yes	Yes	Yes	Yes	Yes
		480i	16x9	—	—	—	—	—	—	Yes	Yes	Yes	Yes	Yes	Yes
		480i	4x3	—	—	—	—	—	—	Yes	Yes	Yes	Yes	Yes	Yes
	Component Composite S-IN HDMI	1080i/p	16x9	Yes	Yes	Yes	Yes	Yes	Yes	—	—	—	—	—	—
		720p	16x9	Yes	Yes	Yes	Yes	Yes	Yes	—	—	—	—	—	—
		480p	16x9	Yes	Yes	Yes	Yes	Yes	Yes	—	—	—	—	—	—
		480p	4x3	Yes	Yes	Yes	Yes	Yes	Yes	—	—	—	—	—	—
		480i	16x9	Yes	Yes	Yes	Yes	Yes	Yes	—	—	—	—	—	—
		480i	4x3	Yes	Yes	Yes	Yes	Yes	Yes	—	—	—	—	—	—
STROBE (4pix)	Digital (Air or Cable)	1080i	16x9	Yes	—	—	—	—	—	—	—	—	—	—	—
		720p	16x9	—	Yes	—	—	—	—	—	—	—	—	—	—
		480p	16x9	—	—	Yes	—	—	—	—	—	—	—	—	—
		480p	4x3	—	—	—	Yes	—	—	—	—	—	—	—	—
		480i	16x9	—	—	—	—	Yes	—	—	—	—	—	—	—
		480i	4x3	—	—	—	—	—	Yes	—	—	—	—	—	—
	Component Composite S-IN HDMI	1080i/p	16x9	—	—	—	—	—	—	Yes	—	—	—	—	—
		720p	16x9	—	—	—	—	—	—	—	Yes	—	—	—	—
		480p	16x9	—	—	—	—	—	—	—	—	Yes	—	—	—
		480p	4x3	—	—	—	—	—	—	—	—	—	Yes	—	—
		480i	16x9	—	—	—	—	—	—	—	—	—	—	Yes	—
		480i	4x3	—	—	—	—	—	—	—	—	—	—	—	Yes

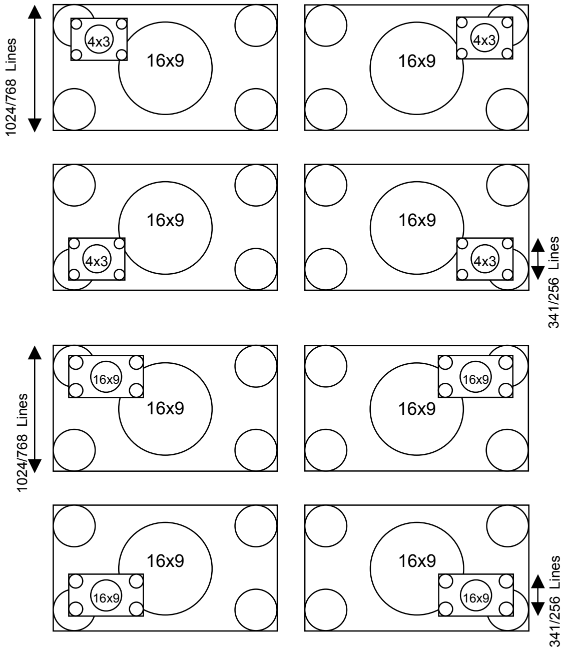
Yes*1: Auto Aspect OFF

Yes*2: Auto Aspect ON

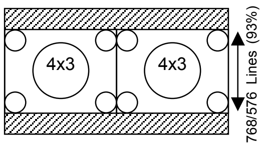
POP Mode:


1024/768 Lines
4x3
4x3
341/256 Lines
4x3
4x3
341/256 Lines
4x3
4x3
341/256 Lines

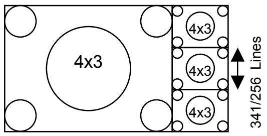
PIP Mode:


1024/768 Lines
4x3
16x9
4x3
16x9
4x3
16x9
4x3
16x9
341/256 Lines
1024/768 Lines
16x9
16x9
16x9
16x9
16x9
16x9
16x9
16x9
341/256 Lines

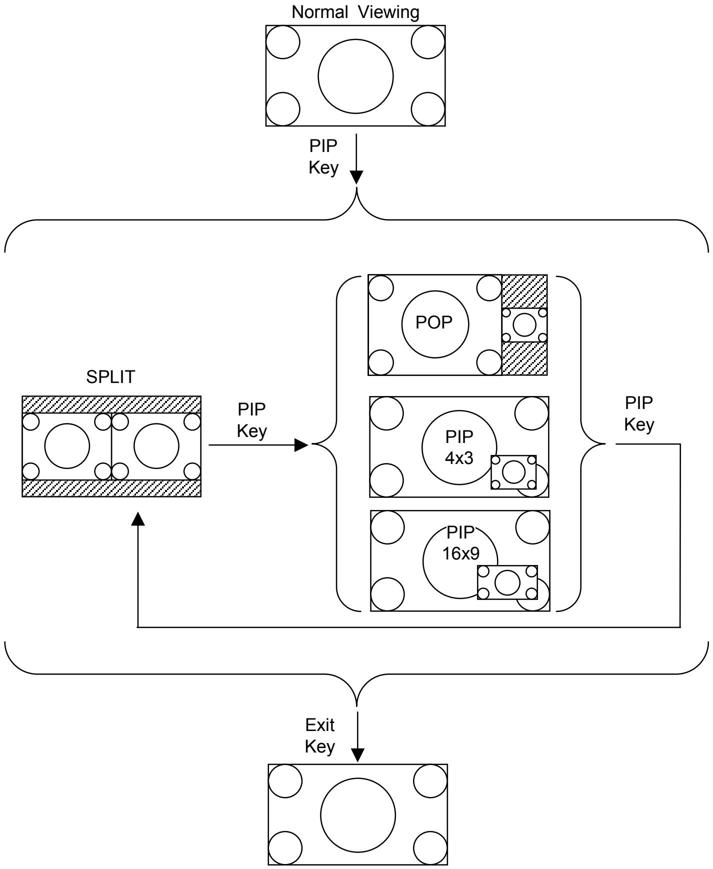
SPLIT Mode:


4x3
4x3
768/576 Lines (93%)

STROBE Mode:

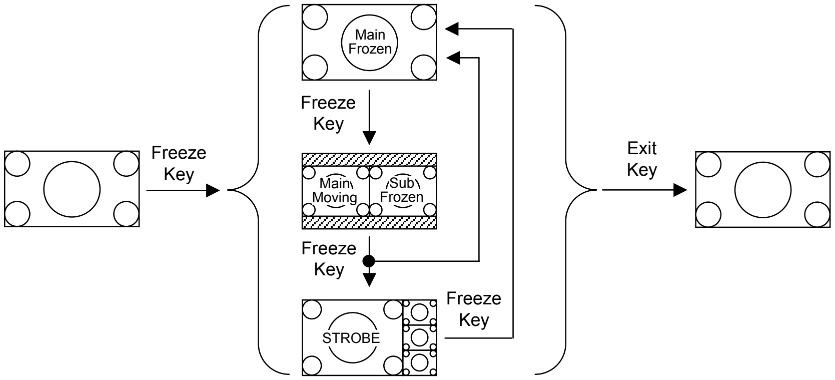

4x3
4x3
4x3
4x3
341/256 Lines

(1) PIP Key Operation

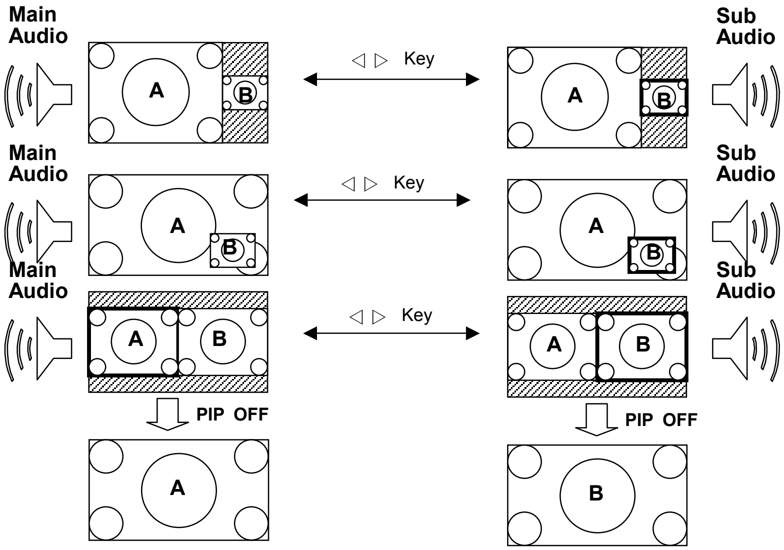

Normal Viewing
PIP
Key
SPLIT
PIP
Key
POP
PIP
4x3
PIP
16x9
PIP
Key
Exit
Key

(Note)
If PIP Key is pushed from a Normal screen, PIP of Last Mode will be displayed.
A shipment setup of PIP Mode is SPLIT Mode.
POP/PIP Mode cannot display 720p/480p signals. Therefore, it displays by SPLIT Mode.
・When Last mode is POP/PIP Mode and a Main signal is 1080i, PIP Mode is set to PIP.
・When Last mode is POP/PIP Mode and a Main signal is 480i/NTSC, PIP Mode is set to PIP.
・SURF Mode is not displayed at a V-Chip setup. SPLIT Mode is displayed at this time.
When EXIT Key is pushed, PIP turns off.
When PIP is turns off, PIP Mode of a display turns into Last Mode.

(2) Freeze Operation

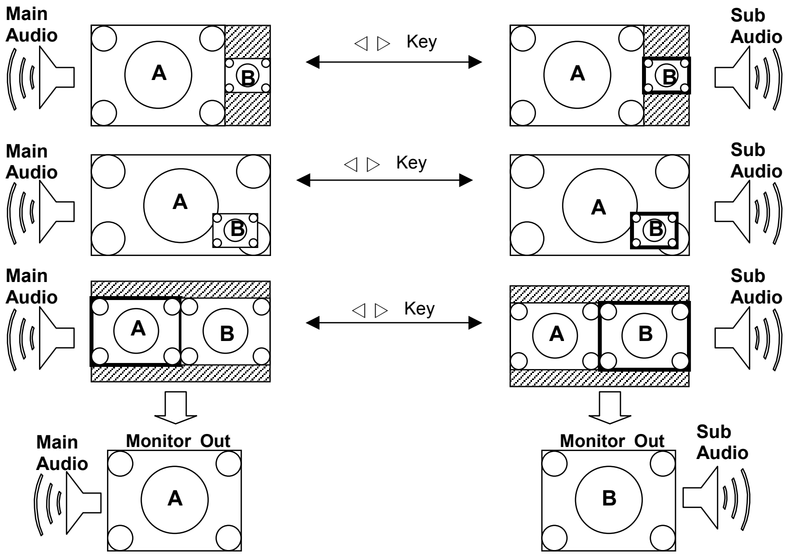

Main
Frozen
Freeze
Key
Freeze
Key
Main
Moving
Sub
Frozen
Freeze
Key
Freeze
Key
STROBE
Exit
Key

(3) SWAP Operation


Main
Audio
A
B
◁ ▷ Key
Sub
Audio
A
B
Main
Audio
A
B
◁ ▷ Key
Sub
Audio
A
B
Main
Audio
A
B
◁ ▷ Key
Sub
Audio
A
B
PIP OFF
A
PIP OFF
B

(Note)
When right and left Key are pushed, the sound of Main and Sub interchanges.
A Channel/Input change can do the screen out of which the sound has come.
When PIP OFF [EXIT Key], the screen where sound is sounding turns into a normal screen.

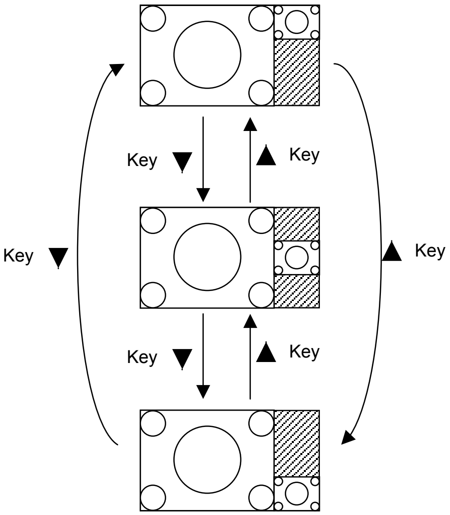
(4) Monitor Out

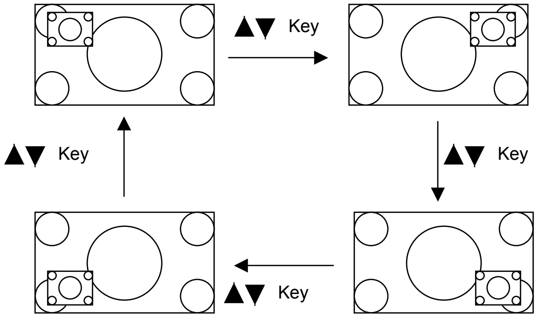


(Note)
When right and left Key are pushed, the sound of Main and Sub interchanges.
The picture and sound of the selected picture are outputted from Monitor out.
When the selected picture is Component or HDMI signal and audio out is monitor, monitor out is no picture and no audio.
When the selected picture is Component or HDMI signal and audio out is HiFi out, monitor out is no picture but audio is output.
When the selected picture is Composite Video signal, S-Video of monitor out is no picture.
When Macrovision signal is included in the ANT Digital channel, monitor out is no picture and no audio.

Input Mode		Monitor Out		
		S-Video	Video	L/R
ANT (AIR or CABLE)	Digital Channel	YES	YES	YES
	Analog Channel	–	YES	YES
Input 1	S-Video_1	YES	YES	YES
	Video_1	–	YES	YES
Input 2	YP_BP_R_2	–	–	–
	Video_2	–	YES	YES
Input 3	YP_BP_R_3	–	–	–
	Video_3	–	YES	YES
Input-Front	Video_Front	–	YES	YES
HDMI 1	HDMI_1	–	–	–
	DVI_1	–	–	–
HDMI 2	HDMI_2	–	–	–
	DVI_2	–	–	–
HDMI-Front	HDMI_Front	–	–	–
	DVI_Front	–	–	–
Photo Input		–	–	–

(4) PIP Position Operation





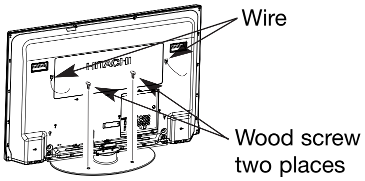
(Note)
The Sub screen position of POP Mode moves up and down by the upper and lower sides Key.
A Sub screen position of PIP Mode moves clockwise by the upper and lower sides Key.

How to set up your new HITACHI Plasma Television

To take measures to prevent the Plasma Television from tipping over and prevent possible injury it is important to mount the unit in a stable and flat surface.

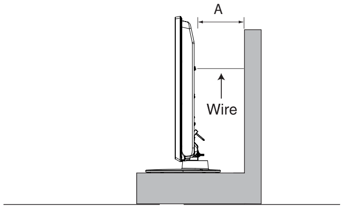
Securing to a table-top

1. Using wood screws (two) fasten the set to the clamping screw holes on the rear of the Plasma TV stand as shown below.
2. Using commercially available wood screws, secure the set firmly in position.



Securing to a Wall

1. Keep the Plasma television 4 inches away from the wall except when mounted using the wall mount bracket.
2. Secure the television to the wall as shown.



	A
42"	4 in.
	10 cm

* Please adjust the wire length to avoid touching the wall when turning the TV.

NOTES: *1. Do not block the ventilation holes of the Plasma Television. Blocking the ventilation holes might cause fire or defect.*

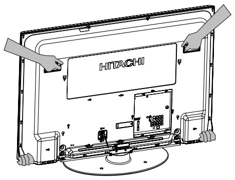
2. In case of an abnormal symptom, unplug the AC cord.

3. If you purchased the wall mount bracket option, please ask for professional installer. Do not install by yourself.

4. Install the unit at a proper area where it does not expose anyone to any danger of hitting themselves (for example their hands, head or face, etc.) against the edge of the unit and cause personal injury.

Caution when moving the main unit

As this product is heavy, whenever it is moved, two people arerequired to transport it safely. Whenever the unit is moved it should be lifted forward using the top and base on both sides of the Television for stability. When moving the Television, lift the handles , then support the top frame as shown below.



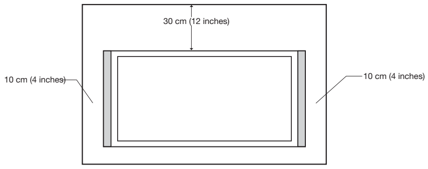
42”

ANTENNA

Unless your Plasma Television is connected to a cable TV system or to a centralized antenna system, a good outdoor color TV antenna is recommended for best performance. However, if you are located in an exceptionally good signal area that is free from interference and multiple image ghosts, an indoor antenna may be sufficient.

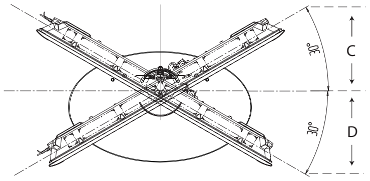
LOCATION

Select an area where sunlight or bright indoor illumination will not fall directly on the picture screen. Also, be sure that the location selected allows a free flow of air to and from the perforated back cover of the set. In order to prevent an internal temperature increase, maintain a space of 10 cm (4 inches) from the sides/back of the Television, and 30 cm (12 inches) from the top of the television to the wall. To avoid cabinet warping, cabinet color changes, and increased chance of set failure, do not place the TV where temperatures can become excessively hot, for example, in direct sunlight or near a heating appliance, etc.



TURNING RADIUS

The maximum turning radius is 30˚ (left and right). Do not place any objects on the path of the monitor when using the swivel feature.



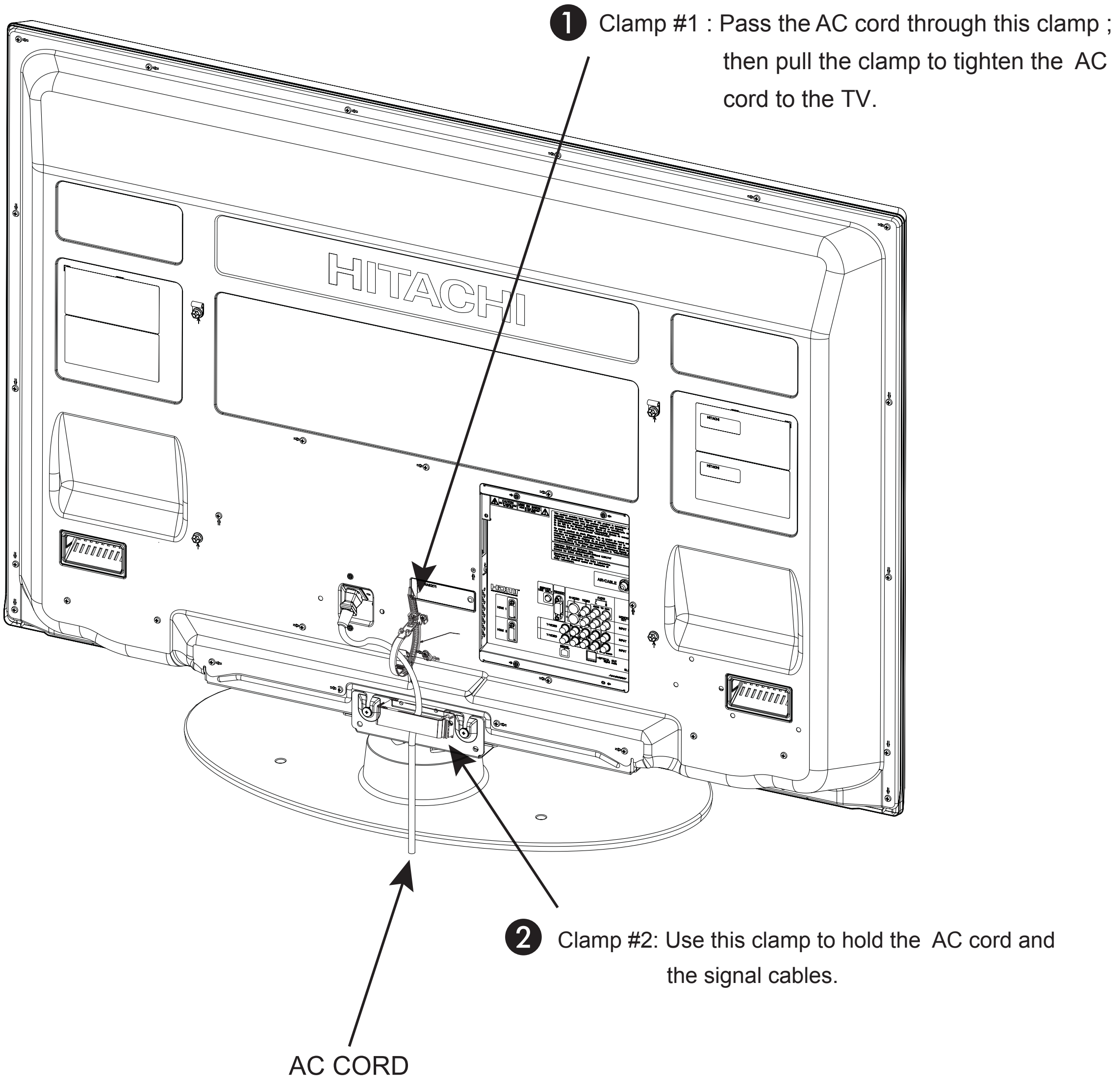
	C	D
42"	10.59 in.	13.93 in.
	27 cm	36 cm

AC CORD INSTALLATION INSTRUCTION

The AC cord provided with your new Plasma Television needs to be installed correctly to avoid the AC cord from disconnecting when rotating the TV on its Table top stand. Located on the back of the TV are 2 plastic clamps to hold the AC cord. Please follow the instructions below.

➊ Pass the AC cord through Clamp #1 and connect it to the TV. Pull on the clamp to tighten the AC cord to the TV.

➋ The AC cord and the signal cables can all be held together with Clamp #2.

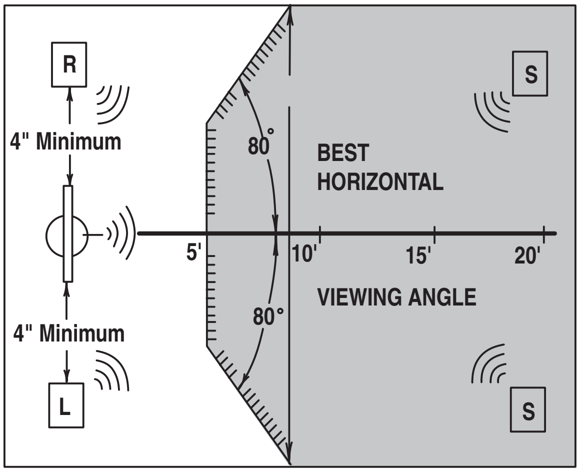

➊ Clamp #1 : Pass the AC cord through this clamp ; then pull the clamp to tighten the AC cord to the TV.
HITACHI
➋ Clamp #2: Use this clamp to hold the AC cord and the signal cables.
AC CORD

VIEWING

The best picture is seen by sitting directly in front of the TV and about 10 to 18 feet from the screen.

During daylight hours, reflections from outside light may appear on the screen. If so, drapes or screens can be used to reduce the reflection or the TV can be located in a different section of the room.

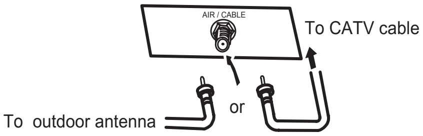
If the TV's audio output will be connected to a Hi-Fi system's external speakers, the best audio performance will be obtained by placing the speakers equidistant from each side of the receiver cabinet and as close as possible to the height of the picture screen center. For best stereo separation, place the external speakers at least four feet from the side of the TV, place the surround speakers to the side or behind the viewing area. Differences in room sizes and acoustical environments will require some experimentation with speaker placement for best performance.



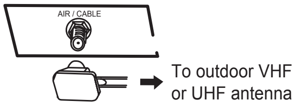
ANTENNA CONNECTIONS TO REAR JACK PANEL

VHF (75-Ohm) antenna/CATV (Cable TV)
When using a 75-Ohm coaxial cable system, connect **CATV** coaxial cable to the AIR/CABLE (75-Ohm) terminal. Or if you have an antenna, connect the coaxial cable to the same AIR/CABLE terminal.

VHF (300-Ohm) antenna/UHF antenna
When using a 300-Ohm twin lead from an outdoor antenna, connect the **VHF** or **UHF** antenna leads to screws of the **VHF** or **UHF** adapter. Plug the adapter into the antenna terminal on the TV.



When both VHF and UHF antennas are connected
Attach an optional antenna cable mixer to the TV antenna terminal, and connect the cables to the antenna mixer. Consult your dealer or service store for the antenna mixer.



To UHF antenna

AIR / CABLE

To outdoor antenna or CATV system

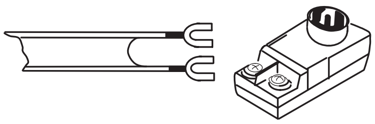
Antenna Mixer

NOTE: *Connecting a 300-Ohm twin lead connector may cause interference. Using a 75-Ohm coaxial cable is recommended.*

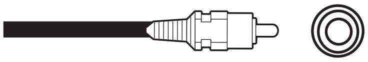
Hook-up Cables and Connectors

Most video/audio connections between components can be made with shielded video and audio cables that have phono connectors. For best performance, video cables should use 75-Ohm coaxial shielded wire. Cables can be purchased from most stores that sell audio/video products. Below are illustrations and names of common connectors. Before purchasing any cables, be sure of the output and input connector types required by the various components and the length of each cable.

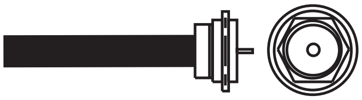
300-Ohm Twin Lead Cable
This outdoor antenna cable must be connected to an antenna adapter (300-Ohm to 75-Ohm).



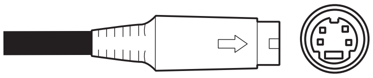
Phono Cable
Used on all standard video and audio cables which connect to inputs and outputs located on the television's rear jack panel and front control panel.



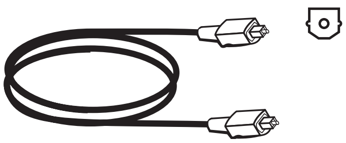
"F" Type 75-Ohm Coaxial Antenna
For connecting RF signals (antenna or cable TV) to the antenna jack on the television.



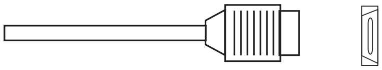
S-Video (Super Video) Cable
This connector is used on camcorders, VCRs and laser-disc players with an S-Video feature in place of the standard video cable to produce a high quality picture.



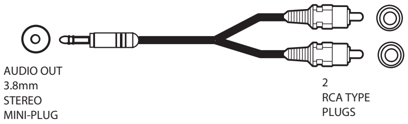
Optical Cable
This cable is used to connect to an audio amplifier with an Optical Audio In jack. Use this cable for the best sound quality.



HDMI Cable
This cable is used to connect your external devices such as Set-Top-Boxes or DVD players equipped with an **HDMI** output connection to the TV's **HDMI** input.

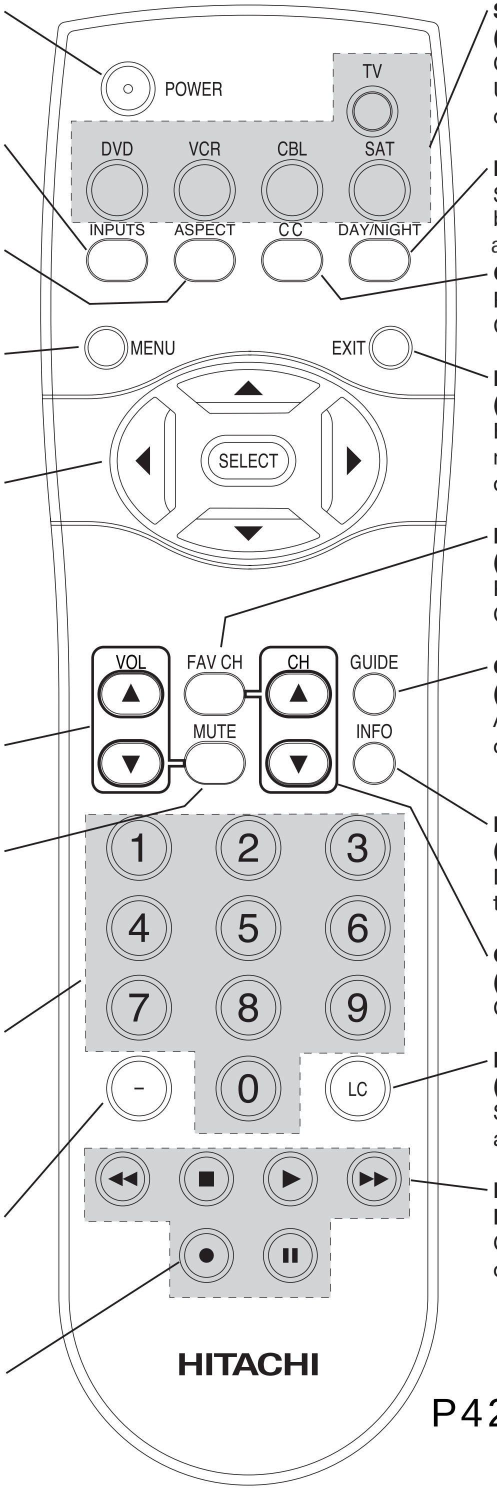


Stereo Cable (3.8mm plug to 3.5mm plug)
Used on all standard video and audio cable which connect to inputs and outputs located on the rear jack panel and front control panel.



Quick Reference Remote Control Buttons and Functions

In addition to controlling all of the functions on your HITACHI Plasma TV, the new remote control is designed to operate different types of devices, such as, DVD Players, CBL (Cable Boxes), set-top-boxes, satellite receivers, and VCRs. The remote control must be programmed to control the chosen device.



POWER BUTTON (TV, CBL, VCR, DVD, SAT)
Turns the selected device on and off.

INPUTS BUTTON (TV)
Accesses the INPUTS menu system.

ASPECT BUTTON (TV)
Changes the aspect ratio while watching TV.

MENU BUTTON (CBL, DVD, SAT, TV)
Accesses the OSD menu system.

CURSOR/SELECT BUTTONS (TV, DVD, CBL, SAT)
The CURSOR buttons are used to navigate the cursor through the OSD and INPUTS menu systems, and the SELECT button is used to Select/Activate the highlighted menu item.

VOLUME BUTTONS (TV)
Adjusts the audio level of your TV.

MUTE BUTTON (TV)
Reduces the audio level to 50% if pressed once, and to complete mute if pressed twice. Press it a third time to restore audio level.

NUMERIC BUTTONS (TV, DVD, CBL, SAT, VCR)
Used to manually enter the TV channel, and used for numeric entry when navigating through the OSD menu system.

(-) BUTTON (TV, SAT)
The (-) button is used when the remote is in Set-Top-Box (STB) mode or when the TV uses a digital input.

RECORD BUTTON (VCR)
Press twice (2 times) to record programs.

SOURCE ACCESS BUTTONS (TV, DVD, VCR, CBL, SAT)
Changes the mode of the Universal Remote Control to control the device selected.

DAY/NIGHT BUTTON (TV)
Select picture mode settings between DAY normal, DAY dynamic and NIGHT mode.

CC BUTTON (TV)
Press to show and change the Closed Caption mode.

EXIT BUTTON (TV, CBL, SAT)
Exits out of the OSD or INPUTS menu systems if their menu is displayed.

FAVORITE CHANNEL (FAV CH) button (TV)
Press to enter/access Favorite Channel (FAV) mode.

GUIDE BUTTON (SAT/STB, CBL)
Accesses the program guide of other devices.

INFO BUTTON (TV, CBL, SAT)
Displays various information on the screen.

CHANNEL BUTTONS (TV, CBL, SAT, VCR)
Changes the channel.

LAST CHANNEL (LC) BUTTON (TV, CBL, SAT)
Switches between the current and last channel viewed.

DVD/VCR CONTROL BUTTONS (DVD, VCR)
Controls the precode functions of your VCR and DVD.

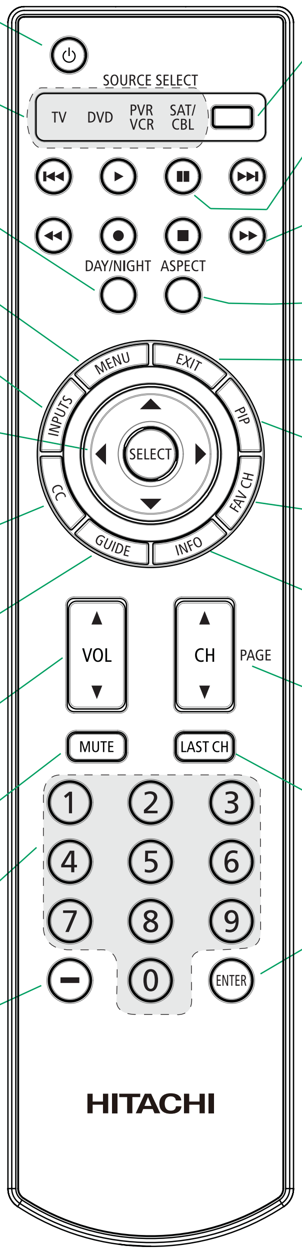
P42H401/P42H4011 Models

LEGEND
TV — Television
CBL — Cable Box
VCR — Video Cassette Recorder/Player
DVD — Digital Video Disc Player
SAT — Satellite Receiver

NOTES: *1. The TV's remote control sensor is located on the right bottom portion of the TV screen. To control TV functions, please point the remote control directly at the remote control sensor for best results.*

Quick Reference Remote Control Buttons and Functions

In addition to controlling all of the functions on your HITACHI Plasma TV, the new remote control is designed to operate different types of devices, such as, DVD Players, CBL (Cable Boxes), set-top-boxes, satellite receivers, and VCRs. The remote control must be programmed to control the chosen device.



POWER BUTTON
(TV, DVD, SAT/CBL,PVR/VCR)
Turns the selected device on and off.

MODE INDICATOR
Turns on or blinks to show remote control mode when the SOURCE ACCESS buttons are pressed.

DAY/NIGHT BUTTON
(TV)
Toggles picture mode settings between DAY normal, DAY dynamic and NIGHT mode.

MENU BUTTON
(TV,DVD,SAT/CBL,PVR/VCR)
Accesses the OSD menu system.

INPUTS BUTTON
(TV)
Accesses the INPUTS menu system.

CURSOR PAD/SELECT BUTTON
(TV, DVD, SAT/CBL,PVR/VCR)
The Cursor Pad is used as a cursor to navigate through the OSD and INPUT menu systems. The Select button is used to Select/Activate highlighted menu items.

Closed Caption (CC) BUTTON
(TV)
Press to show and change the Closed Caption mode.

GUIDE BUTTON
(SAT/CBL, PVR)
Accesses the program guide of other devices.

VOLUME BUTTONS
(TV)
Increase up and decrease down to adjust the audio level of your TV.

MUTE BUTTON (TV)
Reduces the audio level to 50% if pressed once, and to complete mute if pressed twice. Press it a third time to restore audio level.

NUMERIC BUTTONS
(TV, DVD, SAT/CBL, PVR/VCR)
Used to manually enter the TV channel, and used for numeric entry when navigating through the the OSD, INPUTS.

(-) BUTTON
(TV,STB)
The (-) button is used when the remote is in Set-Top-Box (STB) mode or when the TV uses a digital input.

SOURCE SELECT BUTTON
(TV, DVD, PVR/VCR, SAT/CBL)
Changes the mode of the Universal Remote Control to control the device selected.

PAUSE BUTTON
(TV,PVR/VCR, DVD)
Press to show and change the Freeze mode of the TV. Also used to pause other devices when the remote is in DVD, PVR/VCR.

DVD/VCR CONTROL BUTTONS
(DVD, PVR/VCR)
Controls the functions of your VCR, DVD and audio devices.

ASPECT BUTTON
(TV)
Changes the aspect ratio of the TV.

EXIT BUTTON
(TV, SAT/CBL, PVR/VCR)
Exits out of the OSD, INPUTS systems if their menu is displayed.

PIP CONTROL BUTTON
(TV)
Press to show and change the Picture-in-Picture mode.

FAVORITE CHANNEL
(FAV CH) button (TV)
Press to enter/access Favorite Channel (FAV CH) mode. (Favorite channel is only available for TV mode.)

INFO BUTTON
(TV, STB, CBL, PVR)
Displays various information on the screen, such as channel information.

CHANNEL UP & DOWN BUTTONS
(TV, CBL, STB, PVR/VCR)
Changes up or down the channel.

LAST CHANNEL BUTTON
(TV, SAT/CBL, PVR)
Switches between the current and last channel viewed.

ENTER BUTTON
Press to use as SELECT feature.
Can only be used on TV mode.

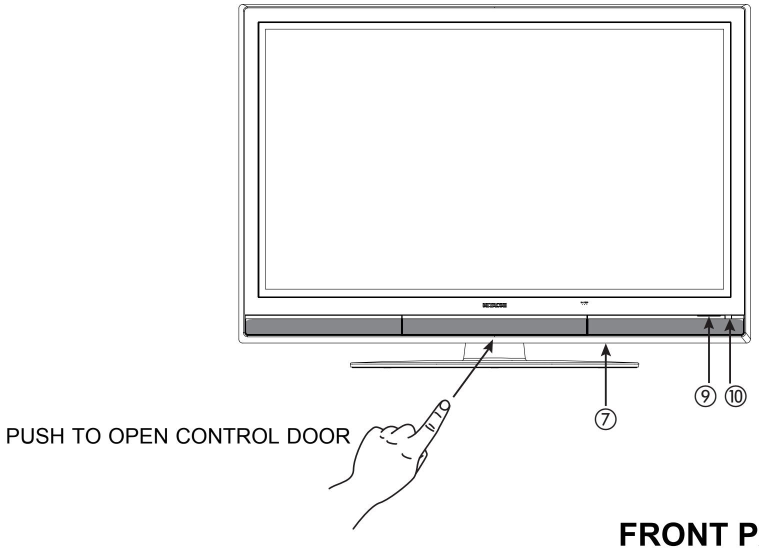
P42T501 Model

LEGEND
TV – Television
CBL – Cable Box
SAT – Satellite
PVR – Video Recorder/Player
DVD – Digital Video Disc Player
VCR – Videocassete Recorder/Player

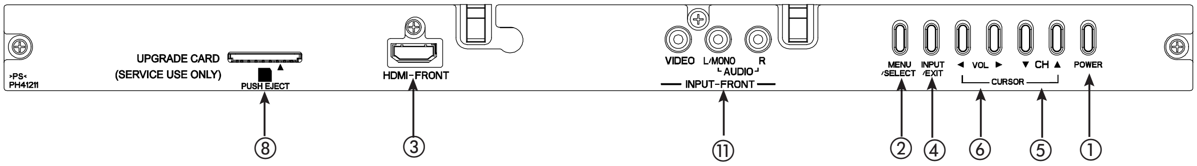
NOTES: **1. The TV's remote control sensor is located on the right bottom portion of the TV screen. To control TV functions, please point the remote control directly at the remote control sensor for best results.**
2. VCR precode is included in the PVR mode.

Front Panel Controls

FRONT VIEW



FRONT PANEL CONTROLS



① FRONT POWER button
Press this button to turn the Plasma Television ON/OFF. It can also be turned ON/OFF by remote control. The “MAIN POWER” button must be at stand-by mode.

② **MENU/SELECT button**
This button allows you to enter the MENU, making it possible to set TV features to your preference without using the remote. This button also serves as the SELECT button when in MENU mode.

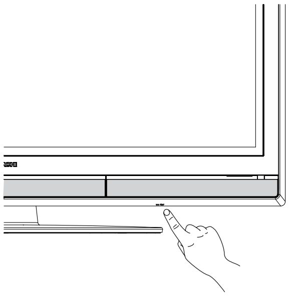
③ HDMI-FRONT
Use the front HDMI input for extrenal devices such as Set-Top-Boxes or DVD players equipped with an HDMI output connection (see page 33 for reference).

④ **INPUT/EXIT button**
Press this button to access the INPUT menu.
Press again to exit the MENU mode.

⑤ **CHANNEL selector**
Press these buttons until the desired channel appears in the top right corner of the TV screen. These buttons also serve as the cursor down (▼) and up (▲) buttons when in MENU mode.

⑥ **VOLUME level**
Press these buttons to adjust the sound level. The volume level will be displayed on the TV screen. These buttons also serve as the cursor left (◄) and right (►) buttons when in MENU mode.

⑦ **POWER button**
Television MAIN POWER button
This power button is for the complete system, and must be turned ON/OFF manually. It is recommended to leave the “MAIN POWER” to ON condition (lights red) for stand-by mode.



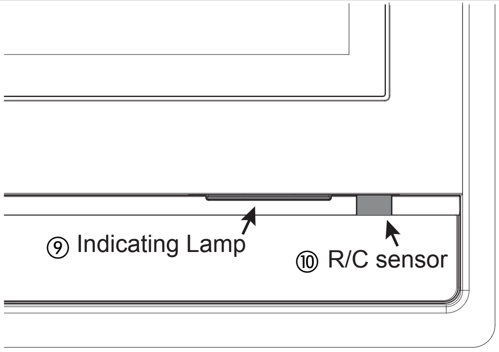
The Main Power button is located on the broadside bottom, under the mark "⏻".

NOTE: *When the “MAIN POWER” button is set to OFF or the TV is unplugged, the clock will stop and may eventually reset itself.*

⑧ Upgrade Card
This card slot is for future software upgrades. Hitachi will notify you if a software upgrade is required for your TV. In order to receive written notification, please complete and return your warranty card.

SERVICERS: Please check the Web Site frequently for current software version.
http://www.hitachiserviceusa.com

Front Panel Controls



⑨ **POWER light indicator**

To turn the TV ON, press the main power switch located on the lower right side of the TV. A red stand-by indicator lamp located on the lower right corner of the front bezel will illuminate. The Plasma TV is now ready for remote ON/OFF operation.

Indicating Lamp	Power Status	Operating
Off	OFF.	When the main power switch is set to Off.
Lights Red	OFF. (Stand-by)	When the main power switch on the TV is ON.
Lights Blue	On	TV MAIN POWER is ON ; picture is shown.
Lights Orange	Off (Power Saving)	TV MAIN POWER is ON with no signal input except antenna (no sync. signal).
Blinking Blue 3 times	On	When TV receive the IR signal once from R/C.

⑩ **REMOTE CONTROL sensor**

Point your remote at this area when selecting channels, adjusting volume, etc.

⑪ **INPUT- FRONT JACKS**

INPUT- FRONT provide composite Video jacks for connecting equipment with this capability, such as a DVD player or Camcorders.

NOTES: 1. ***Your HITACHI Plasma TV will appear to be turned OFF (lights orange) if there is no video input when INPUT : 1, 2, 3, Front and HDMI 1, 2 , Front. Check the Power Light to make sure the TV is turned off or in Stand-by mode (lights red) when not in use.***

2. ***Remote Control can not turn ON/OFF the "MAIN POWER" of the TV.***

Rear Panel Connections

① **Antenna Input**
To switch between Cable and Air input, go to the Channel Manager option to change the signal source CABLE or AIR.

② **Audio/Video Inputs 1, 2 and 3**
By using the INPUTS button, the CURSOR PAD (▲ and ▼), and the SELECT button or CURSOR PAD ▶ of the remote control, you can select each video source. Use the audio and video inputs to connect external devices, such as VCRs, camcorders, laserdisc players, DVD players etc. (if you have mono sound, insert the audio cable into the left audio jack).

③ **MONITOR OUT & AUDIO OUT**
These jacks provide fixed audio and video signals (CABLE/AIR or INPUTS) which are used for recording. Use the S-VIDEO output for high quality video output. Component signal to Input 2 and 3, and HDMI inputs will not have monitor output.

④ **Optical Out (Digital Audio)**
This jack provides Digital Audio Output for your audio device that is Dolby® Digital and PCM compatible, such as an audio amplifier.

NOTE: **Manufactured under license from Dolby Laboratories. “Dolby” and the double-D symbol are trademarks of Dolby Laboratories.*

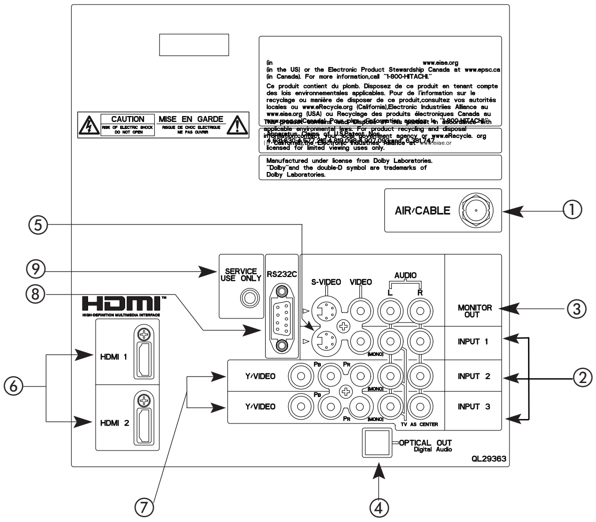
⑤ **S-VIDEO Input 1**
Input 1 provide S-VIDEO (Super Video) jacks for connecting equipment with S-VIDEO output capability.

NOTE: *1. You may use VIDEO or S-VIDEO inputs to connect to INPUT 1 , but only one of these inputs may be used at a time.*
2. S-VIDEO output may be used for recording, only when the input is of S-VIDEO type.

⑥ **HDMI 1, 2 (High Definition Multimedia Interface)**
ABOUT HDMI – HDMI is the next-generation all digital interface for consumer electronics. **HDMI** enables the secure distribution of uncompressed high-definition video and multi-channel audio in a single cable. Because digital television (DTV) signals remain in digital format, **HDMI** assures that pristine high-definition images retain the highest video quality from the source all the way to your television screen.

Use the **HDMI** input for your external devices such as Set-Top-Boxes or DVD players equipped with an **HDMI** output connection.

***HDMI**, the **HDMI** logo and High-Definition Multimedia Interface are trademarks or registered trademarks of **HDMI** Licensing LLC.*


CAUTION
RISK OF ELECTRIC SHOCK DO NOT OPEN
MISE EN GARDE
RISQUE DE CHOC ELECTRIQUE NE PAS OUVRIR
Manufactured under license from Dolby Laboratories. "Dolby" and the double-D symbol are trademarks of Dolby Laboratories.
AIR/CABLE
SERVICE USE ONLY
RS232C
S-VIDEO
VIDEO
AUDIO
L
R
MONITOR OUT
INPUT 1
INPUT 2
INPUT 3
HDMI
HIGH-DEFINITION MULTIMEDIA INTERFACE
HDMI 1
HDMI 2
Y/VIDEO
Y/VIDEO
PB
PR
(MONO)
TV AS CENTER
OPTICAL OUT
Digital Audio
QL29363
①
②
③
④
⑤
⑥
⑦
⑧
⑨

NOTE: *1. The HDMI input is not intended for use with personal computers.*
2. Only DTV formats such as 1080p, 1080i, 720p, 480i and 480p are available for HDMI input.

⑦ **Component: Y-PBPR Inputs**
INPUTS 2 and **3** provide Y-PBPR jacks for connecting equipment with this capability, such as a DVD player or Set Top Box. You may use composite video signal for both inputs.

NOTE: *1. Do not connect composite VIDEO and S-VIDEO to INPUT 1 at the same time. S-VIDEO has priority over VIDEO input.*
2. Your component outputs may be labeled Y, B-Y, and R-Y. In this case, connect the components B-Y output to the TV's PB input and the components R-Y output to the TV's PR input.
3. Your component outputs may be labeled Y-CBCR. In this case, connect the component CB output to the TV's PB input and the component CR output to the TV's PR input.
4. It may be necessary to adjust TINT to obtain optimum picture quality when using the Y-PBPR inputs.
5. To ensure no copyright infringement, the MONITOR OUT output will be abnormal, when using the Y-PBPR jacks and HDMI Input.
6. INPUT 2 , and 3 (Y/VIDEO) can be used for composite video and component video input.

⑧ **For Special AV control use only.**

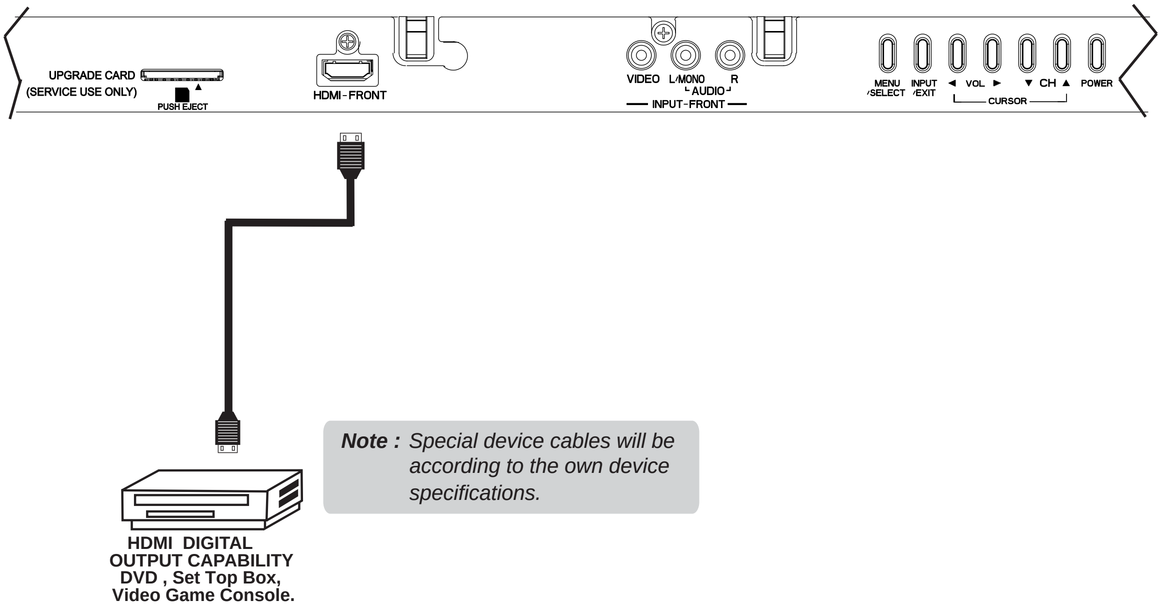
⑨ **For Factory use only.**

Connecting External Video Sources

The FRONT panel jacks are provided as a convenience to allow you to easily connect HDMI or DVI signals from a DVD, Set Top Box , Video Game as shown in the following examples (When connecting DVI signal it will need to connect the audio output into the Front Audio Input jacks) :

A) Connecting HDMI signal.

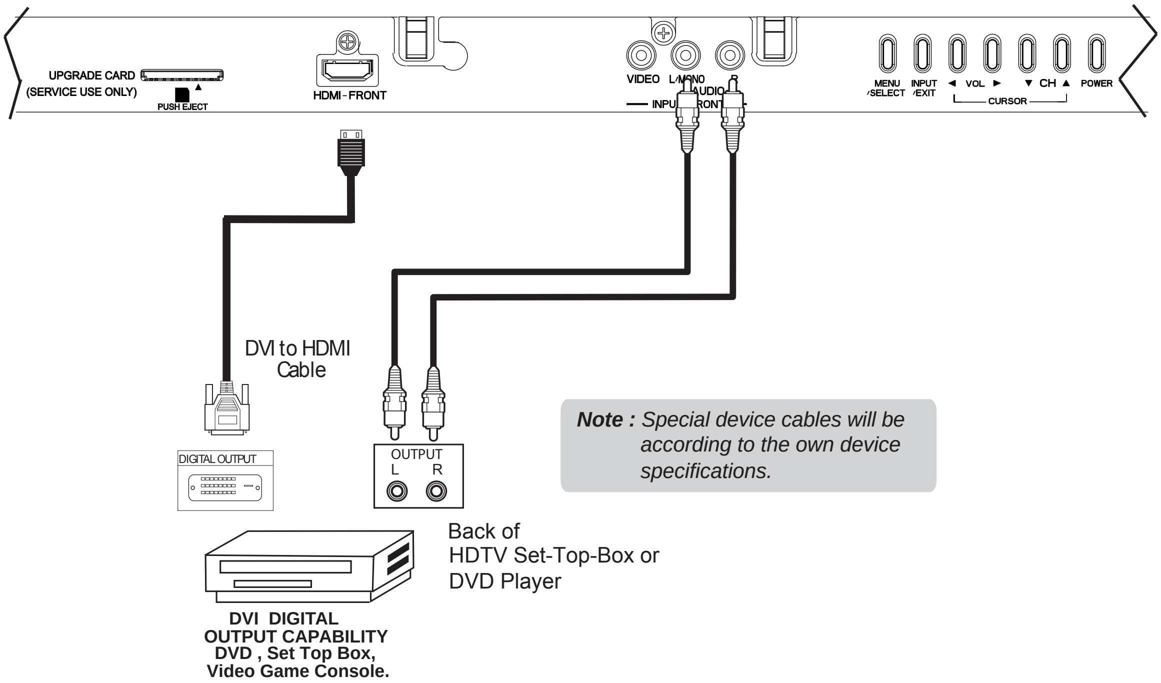
FRONT INPUT PANEL


UPGRADE CARD
(SERVICE USE ONLY)
PUSH EJECT
HDMI - FRONT
VIDEO
L/MONO
R
AUDIO
INPUT - FRONT
MENU /SELECT
INPUT /EXIT
◄ VOL ►
▼ CH ▲
POWER
CURSOR
HDMI DIGITAL
OUTPUT CAPABILITY
DVD , Set Top Box,
Video Game Console.

Note : *Special device cables will be according to the own device specifications.*

B) Connecting DVI signal.

FRONT INPUT PANEL


UPGRADE CARD
(SERVICE USE ONLY)
PUSH EJECT
HDMI - FRONT
VIDEO
L/MONO
AUDIO
INPUT - FRONT
MENU /SELECT
INPUT /EXIT
◄ VOL ►
▼ CH ▲
POWER
CURSOR
DVI to HDMI
Cable
DIGITAL OUTPUT
OUTPUT
L R
Back of
HDTV Set-Top-Box or
DVD Player
DVI DIGITAL
OUTPUT CAPABILITY
DVD , Set Top Box,
Video Game Console.

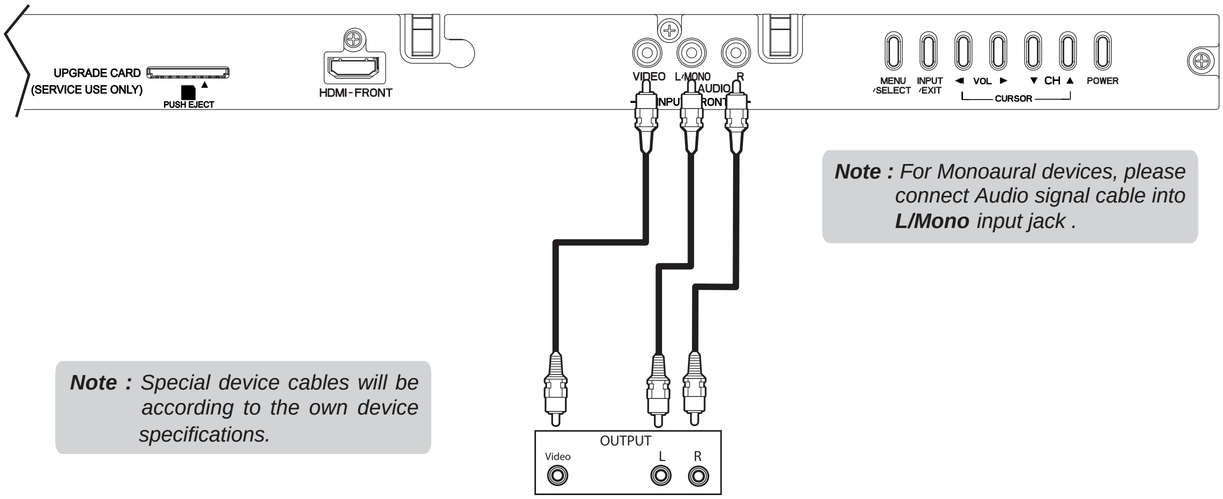
Note : *Special device cables will be according to the own device specifications.*

NOTE: *1. Completely insert connection cord plugs when connecting to front panel jacks. If you do not, the played back picture may be abnormal.*

Connecting External Video Sources

The FRONT panel jacks are provided as a convenience to allow you to easily connect a camcorder , DVD, Video Game and a VCR as shown in the following examples:

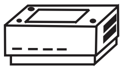
FRONT INPUT PANEL



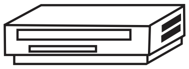
UPGRADE CARD
(SERVICE USE ONLY)
PUSH EJECT
HDMI - FRONT
VIDEO
L/MONO
R
AUDIO
INPUT FRONT
MENU /SELECT
INPUT /EXIT
◄ VOL ►
▼ CH ▲
CURSOR
POWER
OUTPUT
Video
L
R

Note : *For Monoaural devices, please connect Audio signal cable into* ***L/Mono*** *input jack .*

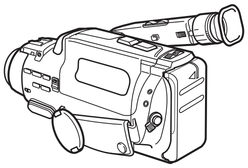
Note : *Special device cables will be according to the own device specifications.*



Video Game



COMPOSITE VIDEO OUTPUT CAPABILITY DVD , Video Game Console.



Video Camera

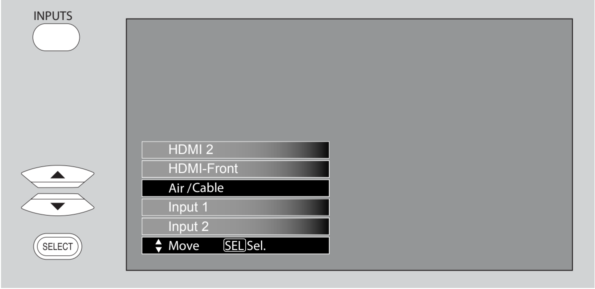
NOTE:1. Completely insert connection cord plugs when connecting to front panel jacks. If you do not, the played back picture may be abnormal.

The exact arrangement you use to connect the VCR, camcorder, laserdisc player, DVD player, or HDTV Set Top Box to your Plasma TV is dependent on the model and features of each component. Check the owner's manual of each component for the location of video and audio inputs and outputs.

The following connection diagrams are offered as suggestions. However, you may need to modify them to accommodate your particular assortment of components and features. For best performance, video and audio cables should be made from coaxial shielded wire.

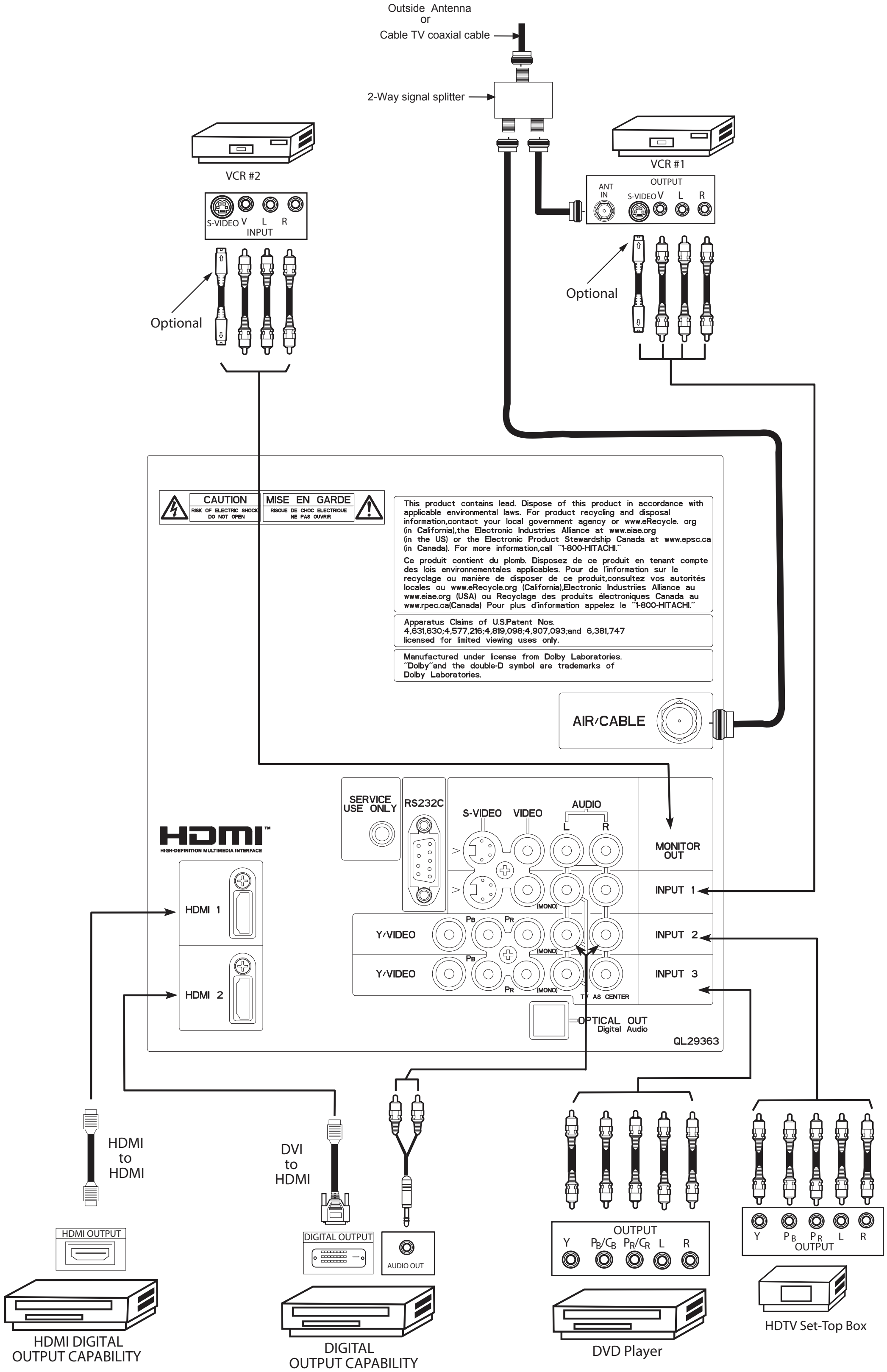
Before Operating External Video Source

Connect an external source to one of the INPUT terminals, then press the INPUTS button to show the INPUTS menu. Use the CURSOR PAD (▲ and ▼) to select the Input of your choice. Then press the SELECT button or the CURSOR PAD ► to confirm your choice.



INPUTS
SELECT
HDMI 2
HDMI-Front
Air /Cable
Input 1
Input 2
Move
SEL Sel.

Rear Panel Connections


Outside Antenna
or
Cable TV coaxial cable
2-Way signal splitter
VCR #2
S-VIDEO
V
L
R
INPUT
Optional
VCR #1
ANT
IN
OUTPUT
S-VIDEO
V
L
R
Optional
CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
MISE EN GARDE
RISQUE DE CHOC ELECTRIQUE
NE PAS OUVRIR
AIR/CABLE
HDMI
HIGH-DEFINITION MULTIMEDIA INTERFACE
SERVICE
USE ONLY
RS232C
S-VIDEO
VIDEO
AUDIO
L
R
MONITOR
OUT
INPUT 1
(MONO)
Y/VIDEO
PB
PR
(MONO)
INPUT 2
Y/VIDEO
PB
PR
(MONO)
INPUT 3
TV AS CENTER
HDMI 1
HDMI 2
OPTICAL OUT
Digital Audio
QL29363
HDMI
to
HDMI
DVI
to
HDMI
HDMI OUTPUT
DIGITAL OUTPUT
AUDIO OUT
OUTPUT
Y
PB/CB
PR/CR
L
R
Y
PB
PR
L
R
OUTPUT
HDMI DIGITAL
OUTPUT CAPABILITY
DIGITAL
OUTPUT CAPABILITY
DVD Player
HDTV Set-Top Box

This product contains lead. Dispose of this product in accordance with applicable environmental laws. For product recycling and disposal information,contact your local government agency or www.eRecycle. org (in California),the Electronic Industries Alliance at www.eiae.org (in the US) or the Electronic Product Stewardship Canada at www.epsc.ca (in Canada). For more information,call ''1-800-HITACHI.''

Ce produit contient du plomb. Disposez de ce produit en tenant compte des lois environnementales applicables. Pour de l'information sur le recyclage ou manière de disposer de ce produit,consultez vos autorités locales ou www.eRecycle.org (California),Electronic Industriies Alliance au www.eiae.org (USA) ou Recyclage des produits électroniques Canada au www.rpec.ca(Canada) Pour plus d'information appelez le ''1-800-HITACHI.''

Apparatus Claims of U.S.Patent Nos. 4,631,630;4,577,216;4,819,098;4,907,093;and 6,381,747 licensed for limited viewing uses only.

Manufactured under license from Dolby Laboratories. ''Dolby''and the double-D symbol are trademarks of Dolby Laboratories.

NOTE: *Cables are optional, except when specified.*

Tips on Rear Panel Connections

- S-VIDEO, Y-PBPR, or HDMI connections are provided for high performance laserdisc players, VCRs etc. that have this feature. Use these connections in place of the standard video connection if your device has this feature.

- If your device has only one audio output (mono sound), connect it to the left audio jack on (L/(MONO)) the Rear Panel.

- Refer to the operating guide of your other electronic equipment for additional information on connecting your hook-up cables.

- A single VCR can be used for VCR #1 and VCR #2, but note that a VCR cannot record its own video or line output (INPUT: 1 in the example on page 35). Refer to your VCR operating guide for more information on line input-output connections.

- Connect only 1 component (VCR, DVD player, camcorder, etc.) to each input jack.

- COMPONENT: Y-$P_B P_R$ (Input 2 & 3) connections are provided for high performance components, such as DVD players and set-top-boxes. Use these connections in place of the standard video connection if your device has this feature.

- Your component outputs may be labeled Y, B-Y, and R-Y. In this case, connect the components B-Y output to the TV's P_B input and the components R-Y output to the TV's P_R input.

- Your component outputs may be labeled Y-$C_B C_R$. In this case, connect the components C_B output to the TV's P_B input and the components C_R output to the TV's P_R input.

- It may be necessary to adjust TINT to obtain optimum picture quality when using the Y-$P_B P_R$ inputs.

- To ensure no copyright infringement, the MONITOR OUT output will be abnormal, when using the Y-PBPR and HDMI input jacks.

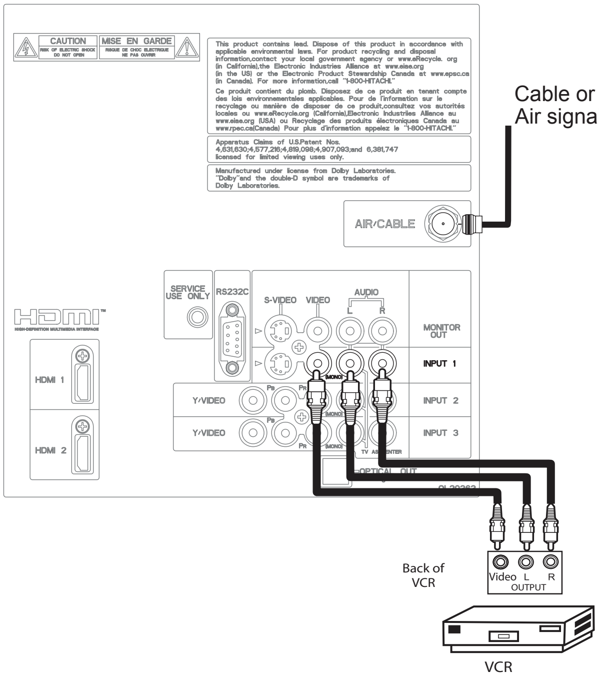
- Input HDMI 1, HDMI 2 or HDMI FRONT can accept HDMI signal.
- S-VIDEO monitor output may be used for recording only when the input is of S-VIDEO type.
- When using a HDMI input from a Set-Top-Box, it is recommended to use a 1080p, 1080i or 720p input signal.
- When HDMI input a 1080p signal, the length of the cable should be less than 5 meters.

INSTALLATION RECOMMENDATION:
1. ***Video signals fed through a VCR may be affected by copyright protection systems and the picture will be distorted on the television.***
2. ***Connecting the television directly to the Audio /Video output of a Set-Top-Box will assure a more normal picture.***

Connecting External Video Sources

CONNECTING A VIDEO AND STEREO AUDIO SOURCE TO INPUT1 ~ INPUT-FRONT

1. Connect the cable from the VIDEO OUT of the VCR or the laserdisc player to the INPUT (VIDEO) jack, as shown on the Rear Panel to the right.
2. Connect the cable from the AUDIO OUT R of the VCR or the laserdisc player to the INPUT (AUDIO/R) jack.
3. Connect the cable from the AUDIO OUT L of the VCR or the laserdisc player to the INPUT (AUDIO/L) jack.
4. Press the INPUTS button, then select INPUT 1 2,3 or Front from the INPUTS menu to view the program from the VCR or laserdisc player.
5. Select CABLE or AIR from the INPUTS menu to return to the last channel tuned.


Cable or Air signal
AIR/CABLE
SERVICE USE ONLY
RS232C
S-VIDEO
VIDEO
AUDIO
L
R
MONITOR OUT
INPUT 1
INPUT 2
INPUT 3
Y/VIDEO
HDMI 1
HDMI 2
Back of VCR
Video L R
OUTPUT
VCR

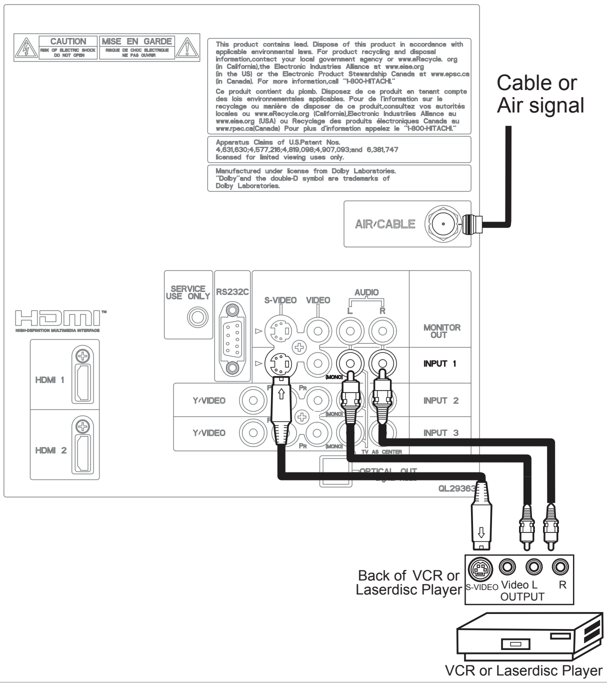
NOTE: *1. Completely insert the connection cord plugs when connecting to rear panel jacks. The picture and sound that is played back will be abnormal if the connection is loose.*

2. A single VCR can be used for VCR #1 and VCR #2 (see page 35) but note that a VCR cannot record its own video or line output. Refer to your VCR operating guide for more information on line input-output connections.

3. When INPUT 2 or 3 are used, it is necessary to connect the video output of the device to the Y/VIDEO input jack of the TV .

CONNECTING AN S-VIDEO AND STEREO AUDIO SOURCE TO INPUT 1

1. Connect the cable from the S-VIDEO OUT of the S-VHS VCR or the laserdisc player to the INPUT (S-VIDEO) jack, as shown on the Rear Panel to the right.
2. Connect the cable from the AUDIO OUT R of the VCR or the laserdisc player to the INPUT (AUDIO/R) jack.
3. Connect the cable from the AUDIO OUT L of the VCR or the laserdisc player to the INPUT (AUDIO/L) jack.
4. Press the INPUTS button, then select INPUT 1 from the INPUTS menu to view the program from the VCR or laserdisc player.
5. Select CABLE or AIR from the INPUTS menu to return to the last channel tuned.


Cable or Air signal
AIR/CABLE
SERVICE USE ONLY
RS232C
S-VIDEO
VIDEO
AUDIO
L
R
MONITOR OUT
INPUT 1
INPUT 2
INPUT 3
Y/VIDEO
HDMI 1
HDMI 2
Back of VCR or Laserdisc Player
S-VIDEO Video L R
OUTPUT
VCR or Laserdisc Player

NOTE: *1. Completely insert the connection cord plugs when connecting to rear panel jacks. The picture and sound that is played back will be abnormal if the connection is loose.*

2. A single VCR can be used for VCR #1 and VCR #2 (see page 35), but note that a VCR cannot record its own video or line output. Refer to your VCR operating guide for more information on line input-output connections.

Connecting External Video Sources

CONNECTING A COMPONENT SOURCE WITH HDMI OR DVI CAPABILITY TO HDMI 1, HDMI 2 OR HDMI FRONT

1. Connect the HDMI or DVI to HDMI connection cable from the output of the HDTV set top box or DVD player to the HDMI input as shown on the Rear panel below.
2. With DVI output, connect the cable from the AUDIO OUT R of the HDTV set top box or DVD player to the INPUT (AUDIO/R) jack as shown on the Rear Panel below.
3. With DVI output, connect the cable from the AUDIO OUT L of the HDTV set top box or DVD player to the INPUT (AUDIO/L) jack as shown on the Rear Panel below.
4. Press the INPUTS button, then select HDMI 1, 2 or FRONT to view the program from the HDTV SET TOP BOX or DVD player.
5. Select CABLE or AIR from the INPUTS menu to return to the last channel viewed.

NOTE: *1. Completely insert the connection cord plugs when connecting to rear panel jacks. The picture and sound that is played back will be abnormal if the connection is loose.*

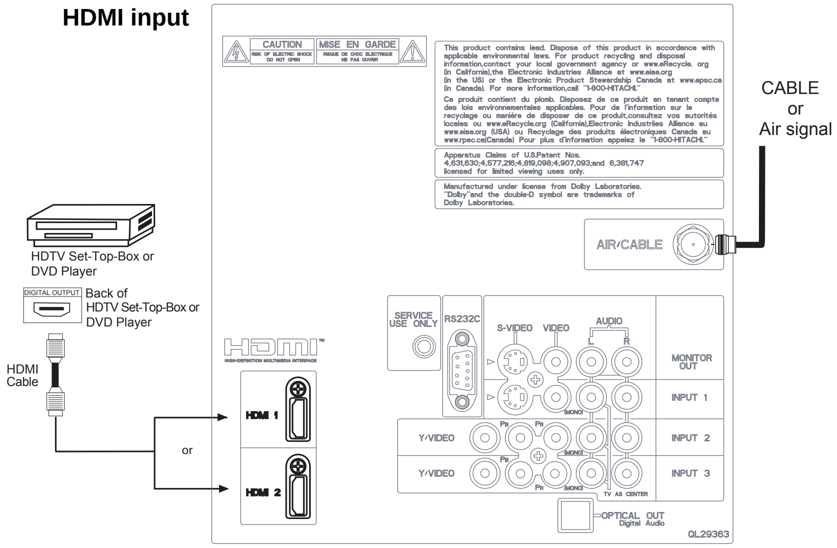
2. The HDMI input on HDMI 1 , 2 and FRONT contains the copy protection system called High-bandwidth Digital Content Protection (HDCP). HDCP is a cryptographic system that encrypts video signals when using HDMI connections to prevent illegal copying of video contents.

3. HDMI is not a "NETWORK" technology. It establishes a one-way point-to-point connection for delivery of uncompressed video to a display.

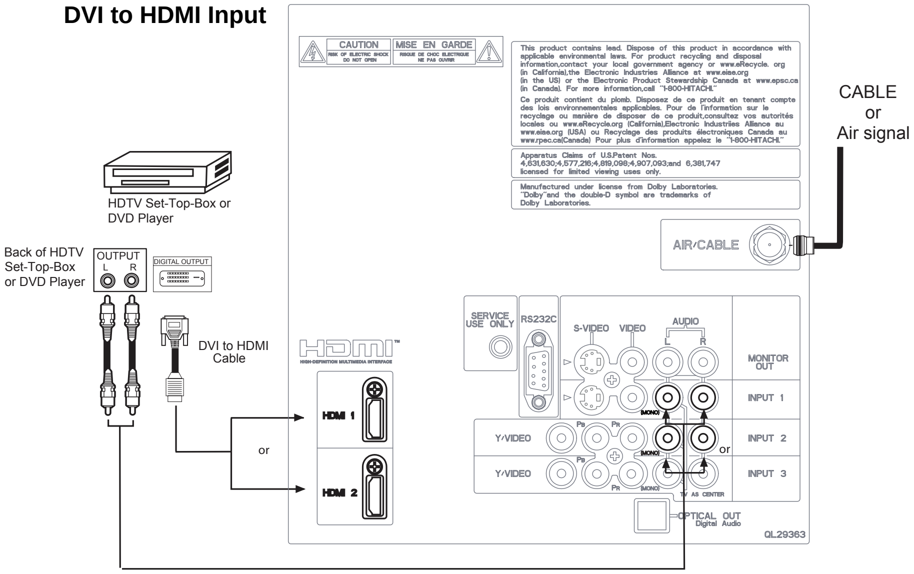
4. The connected digital output device controls the HDMI interface so proper set-up of device user settings determines final video appearance.

5. When using a DVI to HDMI cable, connect the Audio Out L and R cables at the same INPUT (1 , 2 or Front) as your HDMI INPUT(1 , 2 or Front). (For FRONT INPUT see page 33 for reference).

HDMI input


CABLE
or
Air signal
HDTV Set-Top-Box or
DVD Player
DIGITAL OUTPUT
Back of
HDTV Set-Top-Box or
DVD Player
HDMI
Cable
or
CAUTION
MISE EN GARDE
AIR/CABLE
SERVICE
USE ONLY
RS232C
S-VIDEO
VIDEO
AUDIO
L
R
MONITOR
OUT
INPUT 1
INPUT 2
INPUT 3
Y/VIDEO
PB
PR
(MONO)
TV AS CENTER
HDMI 1
HDMI 2
OPTICAL OUT
Digital Audio
QL29363

DVI to HDMI Input


CABLE
or
Air signal
HDTV Set-Top-Box or
DVD Player
Back of HDTV
Set-Top-Box
or DVD Player
OUTPUT
L
R
DIGITAL OUTPUT
DVI to HDMI
Cable
or
CAUTION
MISE EN GARDE
AIR/CABLE
SERVICE
USE ONLY
RS232C
S-VIDEO
VIDEO
AUDIO
L
R
MONITOR
OUT
INPUT 1
INPUT 2
INPUT 3
Y/VIDEO
PB
PR
(MONO)
or
TV AS CENTER
HDMI 1
HDMI 2
OPTICAL OUT
Digital Audio
QL29363

Connecting External Audio/Video Devices

CONNECTING A COMPONENT AND STEREO AUDIO SOURCE TO INPUT 2 or 3 :Y-PBPR.

1. Connect the cable from the Y OUT of the Laserdisc/DVD player or HDTV set top box to the INPUT (Y) jack, as shown on the Rear panel below.

2. Connect the cable from the P_B/C_B OUT or B-Y OUT of the Laserdisc/DVD player or HDTV set top box to the INPUT (P_B) jack.

3. Connect the cable from the P_R/C_R OUT or R-Y OUT of the Laserdisc/DVD player or HDTV set top box to the INPUT (P_R) jack.

4. Connect the cable from the AUDIO OUT R of the Laserdisc/DVD player or HDTV set top box to the INPUT (AUDIO/R) jack.

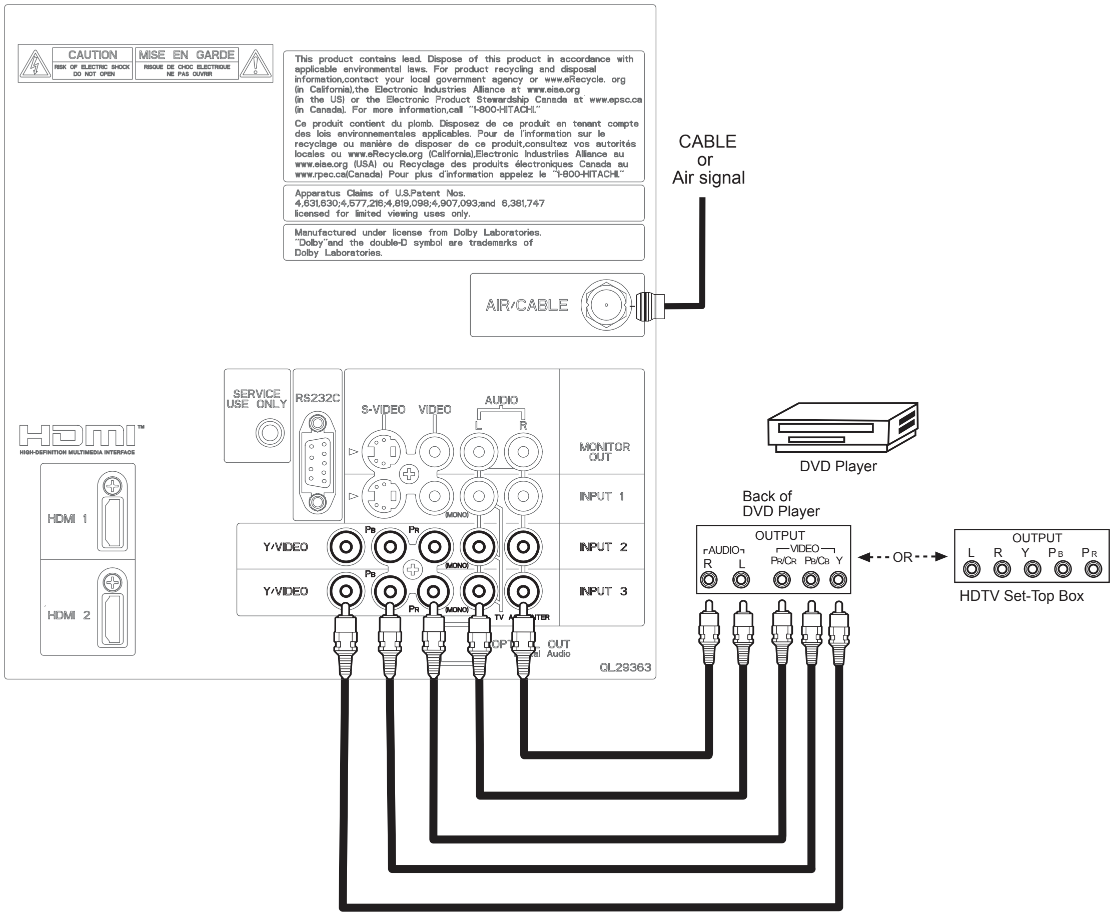
5. Connect the cable from the AUDIO OUT L of the Laserdisc/DVD player or HDTV set top box to the INPUT (AUDIO/L) jack.

6. Press the INPUTS button, then select INPUT 2 or 3 from the INPUTS menu to view the program from the Laserdisc/DVD player or HDTV set top box.

7. Select CABLE or AIR to return to the last channel tuned.

NOTE: *1. Completely insert the connection cord plugs when connecting to rear panel jacks. The picture and sound that is played back will be abnormal if the connection is loose.*

2. See page 36 for tips on REAR PANEL CONNECTIONS.


CAUTION
MISE EN GARDE
AIR/CABLE
CABLE
or
Air signal
SERVICE USE ONLY
RS232C
S-VIDEO
VIDEO
AUDIO
L
R
MONITOR OUT
INPUT 1
INPUT 2
INPUT 3
Y/VIDEO
PB
PR
(MONO)
HDMI 1
HDMI 2
QL29363
DVD Player
Back of
DVD Player
OUTPUT
AUDIO
R
L
VIDEO
PR/CR
PB/CB
Y
OR
OUTPUT
L
R
Y
PB
PR
HDTV Set-Top Box

Connecting External Audio/Video Devices

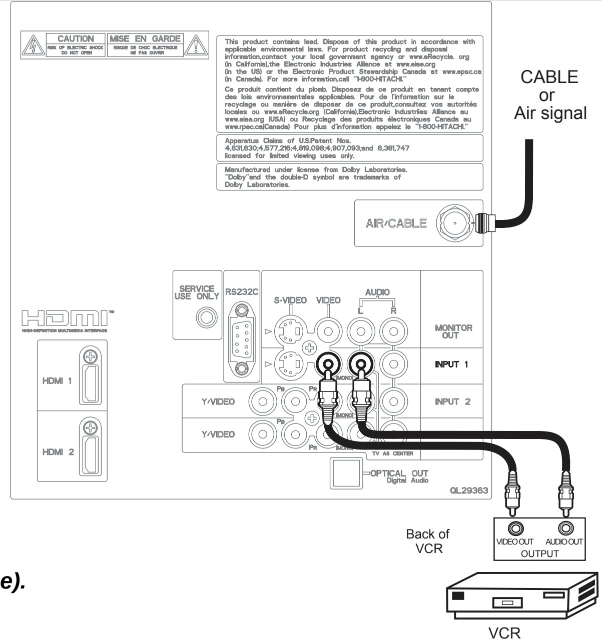
CONNECTING A VIDEO AND MONAURAL AUDIO SOURCE TO INPUT 1 ~ FRONT INPUT

1. Connect the cable from the VIDEO OUT of the VCR or the laserdisc player to the INPUT (VIDEO) jack, as shown on the Rear Panel on the right.

2. Connect the cable from the AUDIO OUT of the VCR or the laserdisc player to the INPUT (MONO)/L(AUDIO) jack.

3. Press the INPUTS button, then select INPUT 1 2,3 or Front from the INPUTS menu to view the program from the VCR or the laserdisc player.

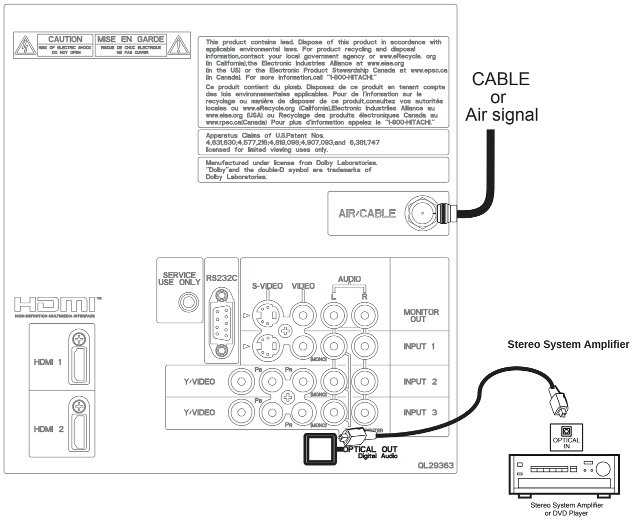
4. Select CABLE or AIR from the INPUTS menu to return to the previous channel.
   (For INPUT FRONT please see page 34 for reference).


CABLE
or
Air signal
AIR/CABLE
SERVICE USE ONLY
RS232C
S-VIDEO
VIDEO
AUDIO
L
R
MONITOR OUT
INPUT 1
INPUT 2
Y/VIDEO
HDMI 1
HDMI 2
OPTICAL OUT
Digital Audio
QL29363
Back of
VCR
VIDEO OUT
AUDIO OUT
OUTPUT
VCR

CONNECTING AN EXTERNAL AUDIO AMPLIFIER

To monitor the audio level of the Plasma TV to an external audio amplifier, connect the system as shown on the right. The “OPTICAL OUT” from the Rear Panel is a fixed output. The Volume of the amplifier is controlled by the amplifier, not by the Plasma Television. The OPTICAL OUT terminal outputs all audio sources with Optical IN capability.

1. Connect an optical cable from the Optical out to the Optical input of a separate Stereo System Amplifier as shown on the Rear Panel on the right.


CABLE
or
Air signal
AIR/CABLE
SERVICE USE ONLY
RS232C
S-VIDEO
VIDEO
AUDIO
MONITOR OUT
INPUT 1
INPUT 2
INPUT 3
Y/VIDEO
HDMI 1
HDMI 2
OPTICAL OUT
Digital Audio
QL29363
Stereo System Amplifier
OPTICAL IN
Stereo System Amplifier
or DVD Player

CONNECTING MONITOR OUT

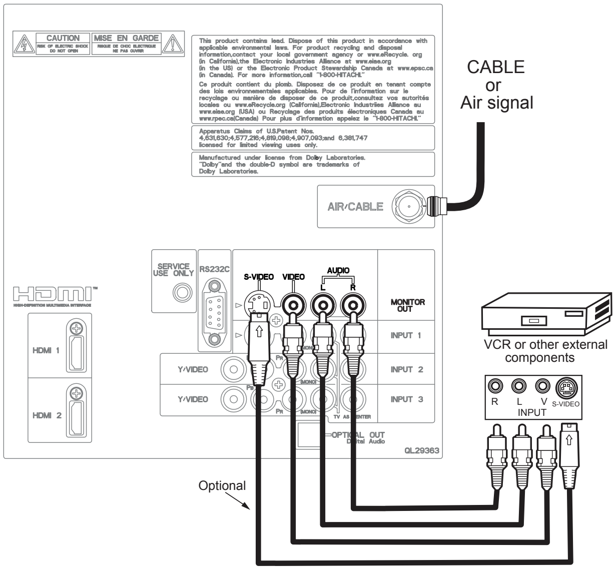
The MONITOR OUT terminal outputs video and audio of CABLE/AIR and INPUTS 1, 2, 3 and Front. It does not output component and HDMI video.

1. Connecting S-Video:
   Connect the cable from the S-VIDEO OUT of the Rear Panel to the INPUT (S-VIDEO) jack, of the VCR or Laserdisk player.

   Connecting Video:
   Connect the cable from the VIDEO INPUT of the VCR or the laserdisc player to the VIDEO out jack on the TV Rear Panel.

2. Connect the cable from the AUDIO IN R of the VCR or the laserdisc player to the OUTPUT (AUDIO/R) jack on the TV Rear Panel.

3. Connect the cable from the AUDIO IN L of the VCR or the laserdisc player to the OUTPUT (AUDIO/L) jack on the TV Rear Panel.


CABLE
or
Air signal
AIR/CABLE
SERVICE USE ONLY
RS232C
S-VIDEO
VIDEO
AUDIO
L
R
MONITOR OUT
INPUT 1
INPUT 2
INPUT 3
Y/VIDEO
HDMI 1
HDMI 2
OPTICAL OUT
Digital Audio
QL29363
VCR or other external
components
R
L
V
S-VIDEO
INPUT
Optional

NOTE: *When making video connections, connect S-Video only or Video only. If both are connected, S-Video takes priority.*

IMPORTANT NOTES

No.	Items	Notes
1	Arcing sound from plasma display monitor's panel.	A buzzing sound might be heard when the plasma display monitor is turned on in a very quiet room. This is due to the plasma panel drive circuit when it is functioning. This arcing sound is normal and it is not a malfunction.
2	Interference for infrared equipment.	Some infrared rays are emitted from the plasma display monitor's panel that might affect other infrared controlling equipment.
3	Bright and dark spots	High-precision technology is used to manufacture the plasma display panel; But in some cases, there are minor defects in some parts of the screen. Points that do not light, points with brightness different from that of the periphery, points with color different from that of the periphery, etc. Some pixels will always be on or always off. Please note that this is not a malfunction.
4	Picture Image (Spectrum)	When receving still picture signals, (e.g. channel number indication or clock indication) for a while, you can see image-like when the picture varied. This is not a defect.
5	Display panel surface temperature is too high	The plasma display panel is lighting the phosphors by the discharge of internal radiation. In some cases, this may cause the temperature of the panel surface to increase. Please note that this is not a malfunction. The Plasma TV surface temperature is higher than a Cathode-ray-tube.
6	Plasma Surface	The plasma panel is made from glass. Heavy shock on the front panel might damage it.
7	Transportation	When the PDP monitor is transported horizontally, the glass panel has the possibility of being broken or increasing the picture defects. At the time of transportation, horizontal style is prohibited. More-over, please treat the plasma panel with great care because of a precision apparatus. Please instruct transporters so that it should be put into the packing box at the time of shipment.(There is a possibility that breakage of the panel or defects will increase.) Rough transportation might cause damage to the panel and pixel failure.
8	Image retention	The plasma monitor illuminates phosphor to display images. The phosphor has a finite illumination life. After extended periods of illumination, the brightness of the phosphor will be degraded to such extent that stationary images would burn-in that part of the screen as grayed-out images. Tips to prevent such image retention are: - Do not display images having sharp brightness differences or hi-contrast images, such as monochrome characters and graphic patterns, for long. - Do not leave stationary images appearing for long, but try to refresh them at appropriate intervals of time, or try to move them using screen saver function. - Turn down the contrast and brightness controls.
9	Luminosity and contrast	PDP television has luminosity and low contrast compared with CRT television.
10	Granular spots	When a screen is seen at point-blank range, a random fine grain may be visible to a dark part.
11	Disturbance to video apparatus	If an apparatus (VCR, etc.) antenna line is arranged near the monitor, the image may shake, or disturbance may be received.
12	Lip Sync	There is some time lag betweeen the picture and the sound. You can see lip motion that is delayed compared to the sound.
13	About the use environment of PDP television (temperature)	Electric discharge/luminescence characteristic of the PDP panel also changes with peripheral temperature. Moreover, since there is also high power consumption value, a specified temperature environment is required.
14	Caution on prolonged storage	Storing the plasma television for a period of more than 2 to 3 months without use might cause an unstable picture when the set is turned on.
15	Operating	Operating altitude: 700 to 1114hPa (9,676ft to -2,484ft). Operating temperature: 41˚F to 95˚F.
16	Storage	Storage Altitude: 300 to 1114hPa (31,912 to -2,484ft). Storage temperature: 5˚F to 140˚F.
17	Power ON or OFF	Frequent use of the Power ON or OFF might trigger the power protection circuit. If the TV does not turn ON, please wait a little before turning ON again.

ADJUSTMENTS TABLE OF CONTENTS

TO GO TO A SECTION, CLICK ON ITS HEADING BELOW

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- 1.2 Changing data and selecting adjustment code..43

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- 2.1 Memory initialize operation..43
- 2.2 Factory and service adjustments 44

3 Video Adjustment 44

- 3.1 Sub-Contrast & Clamp Adjustment 44

4 White balance adjustment 45

- 4.1 Video Color Temperature Adjustment (High)..45
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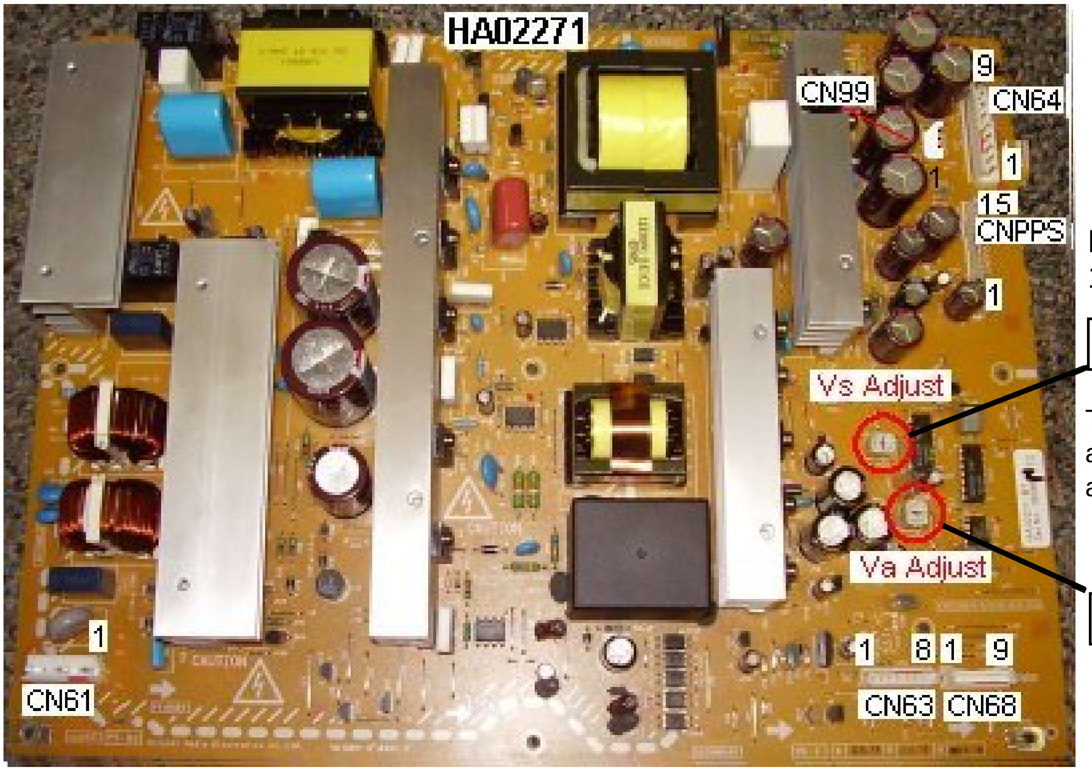
6 Screen Check 49

7 HDMI Adjustment 49

8 Factory Reset 49

9 Settings for Delivery 50

If it becomes necessary to replace the Power Supply PWB HA02771, the Vs and Va voltage pots MUST be placed in the CENTER of their rotation. Adjustments will be made Automatically.



CN99
Pin 1 Va
Pin 2 Vs
Pin 3 Gnd

Heat Run Full White
1 Minute before Adjustment

Vs Adj Center the Pot

The Logic PWB will make the appropriate Vs/Va adjustments after power on.

Va Adj Center the Pot

CH 7

To Index

1 ADJUSTMENT PROCEDURE START-UP

The P42H401, P42T501 and the P42H4011 PDP TV sets pass through adjustment procedures during the assembly process. These adjustments must be done to assure the best performance of the PDP set for the consumer.

Also, after servicing, these same adjustments must be done. The adjustments are all made through the I²C bus by changing data in the Adjustment mode menu.

1.1 HOW TO GET TO ADJUSTMENT MODE

Chassis adjustment mode can be access by pressing the R/C keys MENU + MENU + 8 + SELECT to enter adjustment mode. For some parameters the only way to see them is by selecting the parameter number than press SELECT in order to see it; then DATA can be change if other parameter needs to change then press ▼ key then repeat the same procedure.

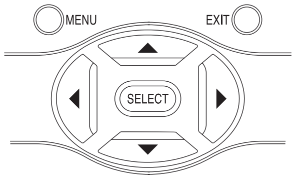
ADJUST MODE
FACT RESET
MEMORY INIT
RGB
WHITE BAL HIGH
WHITE BAL MED
WHITE BAL STD
WHITE BAL B/W

To escape from Adjustment Mode press “INPUT” key on Front panel or EXIT key of R/C to exit service adjustment mode.

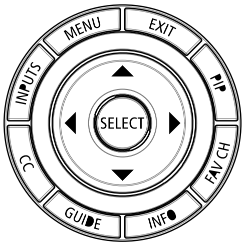
1.2 CHANGING DATA AND SELECTING ADJUSTMENT CODE

When the PDP set is in adjustment mode, the cursor ◀, ▶, ▲, ▼ and MENU keys of the remote control or front panel may be used as the adjustment keys.

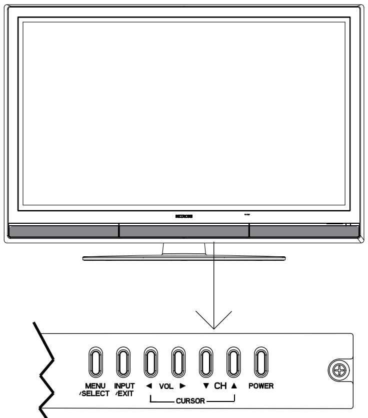
(1) Use any Hitachi remote control when making an adjustment.
▲, ▼ keys are used for selecting adjustment item.
◀, ▶ keys are used for changing data values.
MENU key is used to advance through the adjustment mode menus and pages.



Part of H model's remote control



Part of T model's remote control



Front Panel control buttons.

(2) To make a selection, use the NUMBER pad on the PDP R/C ; example : select DEVICE press 69 then SELECT the DATA shown is "EB" ; if this DATA needs to be change press the ◀, ▶, keys to modify, when finish press SELECT key to store the new DATA value.
normal condition.

(3) After finishing the necessary adjustment press the R/C EXIT key or EXIT key on the front panel.
Adjustment mode is released and PDP set returns to normal condition.

2 MEMORY INITIALIZE

2.1 MEMORY INITIALIZE OPERATION

NOTE: The execution of this function returns the adjustment codes to the preset values, therefore, **adjustment data will be lost**.

Procedure

(1) Enter Adjustment mode by the method described in sub-items 1.1 and 1.2 from item 1 (“Adjustment procedure start up”).
(2) Get to the second page of Adjust Mode by pressing remote control “Menu” key once, or with either the R/C or front panel ▲, ▼ cursor keys several times.
(3) Select MEMORY INIT adjust code.
(4) Activate MEMORY INIT by pressing ▶ cursor key for more than 3 seconds.
(5) Check the following process for initialization operation.

BACK TO ADJUSTMENTS

·**Process of Memory Initialize operation.**

① A screen is be colored **cyan** when MEMORY INIT start.

② A screen is be colored **green** when MEMORY INIT finish normally.

③ A screen is be colored **red** when MEMORY INIT finish abnormally.

(6) Do not unplug from AC outlet until this operation is complete and do not perform any key operation either, after this operation each factory setting and all adjust mode data should reset to delivery settings automatically.

(7) After Memory Initialize, it should be unplug AC cord. Unplug and plug AC cord and then all settings and data are updated.

(8) When PDP turns ON , it will tune CH03 this is the complete operation of Memory Initialize process.

2.2 FACTORY AND SERVICE ADJUSTMENTS

The adjustment item that is affected by the memory initialize operation is shown below:

ITEM	MEMORY INITIALIZE	PROTECTION DATA	FACTORY RESET	MMC SOFTWARE UPGRADE	BECKHAM SOFTWARE UPGRADE
WHITE BALANCE ADJUSTMENT DATA	NOT INITIALIZED	INITIALIZED	NOT INITIALIZED	NOT INITIALIZED	INITIALIZED
SUB CONTRAST ADJUSTMENT DATA	NOT INITIALIZED	INITIALIZED	NOT INITIALIZED	NOT INITIALIZED	INITIALIZED
CLAMP OFFSET ADJUSTMENT DATA	NOT INITIALIZED	INITIALIZED	NOT INITIALIZED	NOT INITIALIZED	INITIALIZED
OTHER ADJUSTMENT MODE DATA	INITIALIZED	NOT INITIALIZED	NOT INITIALIZED	NOT INITIALIZED	INITIALIZED
FACTORY RESET	INITIALIZED	NOT INITIALIZED	INITIALIZED	NOT INITIALIZED	INITIALIZED

3 VIDEO ADJUSTMENT

Note: Perform pre heat-run for more than 20 min. before adjusting.

3.1 SUB-CONTRAST & CLAMP OFFSET ADJUSTMENT

Preparation for adjustment

(1) Pre-heat at least 2 min. before the Final Adjust.

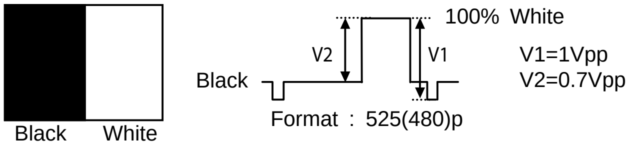
(2) Recall user menu and select ‘Video’→ ‘Picture Mode’→ ‘Day(Dynamic)’→ ‘Reset’.

(3) Receive following signal into input3 or input4(Comp) input.

Adjustment procedure

3.11 525p Sub-Contrast, Y/Cb/Cr Clamp offset adjustment

(1) Receive following 525(480)p Signal.



Adjustment signal for 525(480)p format

(2) Go into Service Adj. Menu and select ‘RGB’ .

(3) Press ▶ for over 2 seconds and have it perform automatic adjustment. When it’s completed, ‘Auto Adjusting’ on the screen will be disappeared.

3.12 525i Cb,Cr Clamp offset adjustment

Preparation

(1) Change signal format from 525(480)p to 525(480)i. (See Fig.2)

Adjustment

(1) Select ‘RGB’ of Service Adj. Menu. Press ▶ for over 2 seconds and have it perform automatic adjustment. When it’s completed, ‘Auto Adjusting’ on the screen will be disappeared.

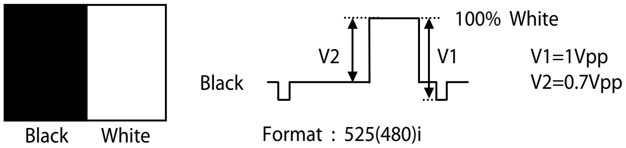


Fig.2 Adjustment signal for 525(480)i format

BACK TO ADJUSTMENTS

4 WHITE BALANCE ADJUSTMENT

General Notes for White Balance

(1) If the incident illumination is more than 20 lux, change the environment (location, lighting, etc.) and ensure it to be less than 20 lux.

(2) At least one of the color drive codes must stay at its maximum value, FF_H.

4.1 VIDEO COLOR TEMPERATURE ADJUSTMENT (HIGH)

Preparation 1

(1) Set the output of signal generator to white raster. (Ratio:100%)

(2) Component signal (480i)

Video level:	0.700Vp-p
SYNC:	0.300Vp-p
Set-up level:	0V

(3) Input white raster signal into COMPONENT input terminal of the PDP set.

(4) Set user control to Day(Dynamic) mode. (Picture Mode)

(5) Confirm that the mode is set as “Factory Setting Mode”.

(6) Aspect: 4:3 Expanded

Adjustment

(1) Perform the following adjustment with the remote control.

(2) Set the CRT color analyzer (CA-100) at the center of the panel.

(3) Set color temperature to “HIGH”.

(4) Ensure that Adjustment R/G/B DRIVE (HIGH) are all set as FF.

(5) After receiving White raster signal, step down the two (or one) among Adjustment R/G/B DRIVE (HIGH) and adjust the value shown in the following:

Specification
Video Color temperature (HIGH)

x = 0.266 ± 0.005
y = 0.270 ± 0.005
(Color temp: 14000K+0MPCD)

At least one of the data should be FF.

Remarks

(1) Color temperature should be adjusted under the condition in which the screen is the brightest, thus the initial value for adjustment is set to its maximum.

(2) Adjustment is made by reducing brightness only. Reduce a bright color for adjustment.

(3) Video color temperature & Adjustment No. are the same, but addresses in the memory are different, thus there’s no problem.

4.2 VIDEO COLOR TEMPERATURE ADJUSTMENT (MEDIUM)

Preparation

(1) Same as “Video Color Temperature adjustment: (HIGH)”.

Adjustment

(1) Perform the following adjustment with the remote control.

(2) Set the CRT color analyzer (CA-100) at the center of the panel.

(3) Set color temperature to “MEDIUM”.

(4) Ensure that Adjustment R/G/B DRIVE (MEDIUM) are all set as FF.

(5) After receiving White raster signal, step down the two (or one) among Adjustment R/B/G DRIVE (MEDIUM) and adjust the value shown below.

Specification
Video Color temperature (MED)

x = 0.285 ± 0.005
y = 0.293 ± 0.005
(Color temp: 9300K)

At least one of the data should be FF.

Remarks

(1) Color temperature should be adjusted under the condition in which the screen is the brightest, thus the initial value for adjustment is set to its maximum.

(2) Adjustment is made by reducing brightness only. Reduce a bright color for adjustment.

(3) Video color temperature & Adjustment No. are the same, but addresses in the memory are different, thus there’s no problem.

BACK TO ADJUSTMENTS

4.3 VIDEO COLOR TEMPERATURE ADJUSTMENT (STD)

Preparation

(1) Same as “Video Color Temperature adjustment: (HIGH)”.

Adjustment

(1) Perform the following adjustment with the remote control.
(2) Set the CRT color analyzer (CA-100) at the center of the panel.
(3) Set color temperature to “STD”.
(4) Ensure that Adjustment R/G/B DRIVE (STD) are all set as FF.
(5) After receiving White raster signal, step down the two (or one) among Adjustment R/B/G DRIVE (STD) and adjust the value shown below.

Specification
Video Color temperature (STD)

x = 0.314 ± 0.005
y = 0.323 ± 0.005
(Color temp: 6500K)

At least one of the data should be FF.

Remarks

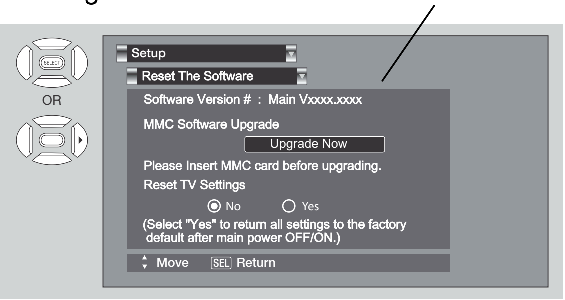
(1) Color temperature should be adjusted under the condition in which the screen is the brightest, thus the initial value for adjustment is set to its maximum.
(2) Adjustment is made by reducing brightness only. Reduce a bright color for adjustment.
(3) Video color temperature & Adjustment No. are the same, but addresses in the memory are different, thus there’s no problem.

5 DIGITAL MAIN CHECK

5.1 SYSTEM SOFTWARE VERSION CHECK

(1) Press Menu button on the R/C or control panel.
(2) Enter the SETUP options, and then look for UPGRADES option.
(3) The Main software version will be display Vxxx.xxxx as shown on Fig. 1.
(4) If this version needs to be change for a design improvement or failure, please select the Upgrade Now button after inserting MMC/SD card.

Fig. 1



Software Version

Software Version # : Main Vxxxx.xxxx

MMC Software Upgrade

Please Insert MMC card before upgrading.

Reset TV Settings

● No ○ Yes

(Select "Yes" to return all settings to the factory default after main power OFF/ON.)

(5) The upgrading process begin by filling a bar, when finish the message will say, “Upgrade complete …” when this appear unplug the TV from the AC line outlet to complete the process.
(6) Now plug again the TV and verify the new software version.
(7) The Main software version will display the latest version issue by design.

NOTE:

(1) In case that the upgrade fails or when a CARD is inserted with new version and can’t upgrade ; please perform the **FACTORY RESET** process to the TV, then try upgrading again.

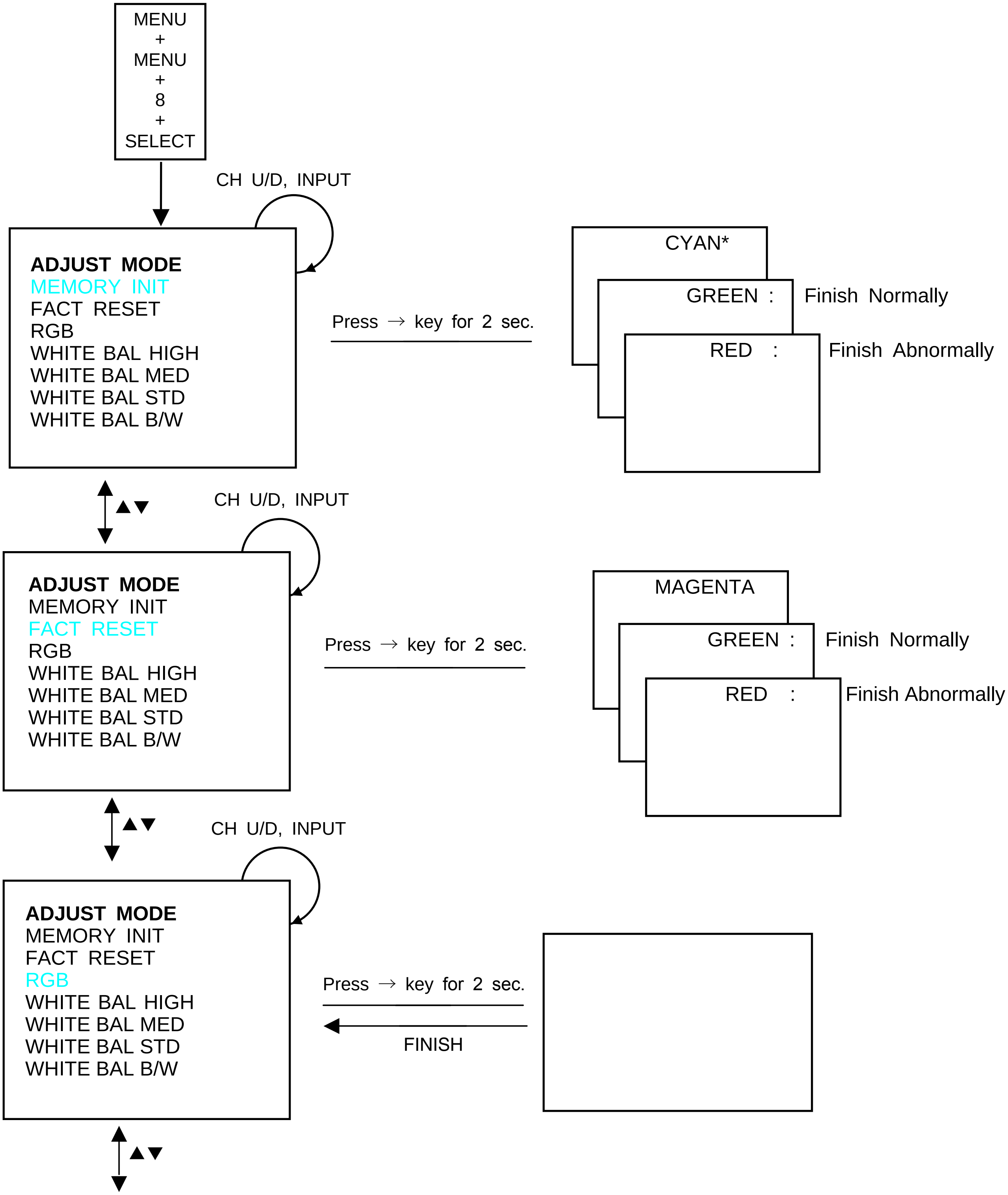
BACK TO ADJUSTMENTS

4.4 WHITE BALANCE ADJUSTMENT OSD FLOW DIAGRAM

4.4.1 Adjustment OSD Flowchart

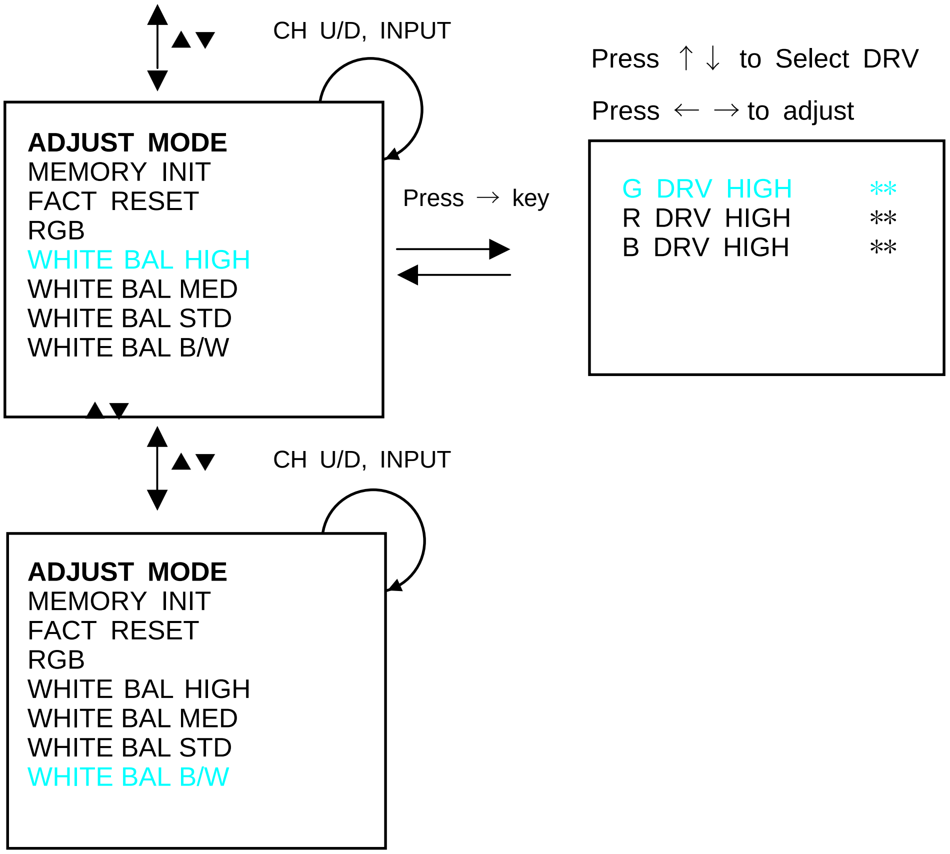
(1) Adjust Mode OSD

Press [MENU]+[MENU]+[8]+[SELECT] of Control panel.


MENU
+
MENU
+
8
+
SELECT
CH U/D, INPUT
ADJUST MODE
MEMORY INIT
FACT RESET
RGB
WHITE BAL HIGH
WHITE BAL MED
WHITE BAL STD
WHITE BAL B/W
Press → key for 2 sec.
CYAN*
GREEN :
Finish Normally
RED :
Finish Abnormally
▲▼
CH U/D, INPUT
ADJUST MODE
MEMORY INIT
FACT RESET
RGB
WHITE BAL HIGH
WHITE BAL MED
WHITE BAL STD
WHITE BAL B/W
Press → key for 2 sec.
MAGENTA
GREEN :
Finish Normally
RED :
Finish Abnormally
▲▼
CH U/D, INPUT
ADJUST MODE
MEMORY INIT
FACT RESET
RGB
WHITE BAL HIGH
WHITE BAL MED
WHITE BAL STD
WHITE BAL B/W
Press → key for 2 sec.
FINISH
▲▼

BACK TO ADJUSTMENTS

4.4.1 Adjustment OSD Flowchart (continued)


▲▼
CH U/D, INPUT
Press ↑ ↓ to Select DRV
Press ← → to adjust
ADJUST MODE
MEMORY INIT
FACT RESET
RGB
WHITE BAL HIGH
WHITE BAL MED
WHITE BAL STD
WHITE BAL B/W
Press → key
G DRV HIGH **
R DRV HIGH **
B DRV HIGH **
▲▼
▲▼
CH U/D, INPUT
ADJUST MODE
MEMORY INIT
FACT RESET
RGB
WHITE BAL HIGH
WHITE BAL MED
WHITE BAL STD
WHITE BAL B/W

WHITE BALANCE
ADJUST MODE

VIDEO SETTINGS
(1) CONTRAST ; MAX
(2) COLOR,TINT,SHARP,BRIGHT ; CENTER
(3) COLOR TEMP ; HIGH

ADJUST
(1) Press ↑ ↓ to Select the G DRV,R DRV, B DRV.
(Initial value R/G/B DRV : FF)

(2) Press ← →to adjust

BACK TO ADJUSTMENTS

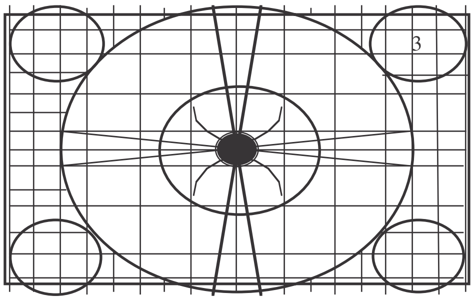
6 SCREEN CHECK

Preparation

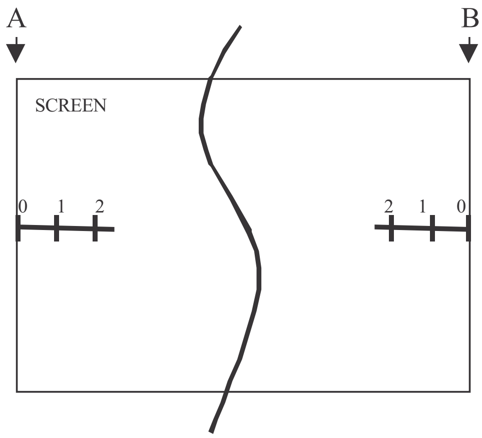
(1) Set AC120±1V.
(2) Turn on the power and leave it more than 5 min.
(3) Receive circle pattern at 4:3 Expanded mode.
(4) Input 480p and 1080i circle pattern into Component video 3. (ASPECT 16:9 Standard)

Checking

(1) Receive RF, 480p and 1080i signal, then check the following items 1~4:
  1. Check the symmetry of the pattern (right/left).
  2. Check the horizontal position and the balance (right/left).
  3. Check the symmetry of the pattern (top/bottom).
  4. Check the vertical position and the balance (top/bottom).



Remarks



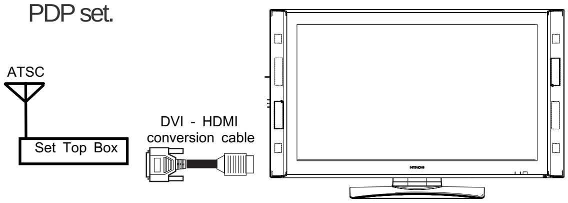
SIGNAL	ASPECT	SPEC(A,B)
Hitachi circle pattern	16:9 Standard1	0 +/- 0.5

7 HDMI ADJUSTMENT

(1) DVI compatibility check

Preparation

1. Prepare HDTV signal generator.
2. Select DVI mode then 1080i format
3. Connect HDMI-DVI cable to the HDMI input on the PDP set.



8 FACTORY RESET

After all of the adjustments of main chassis are finished, perform FACTORY RESET.

(1) Enter Adjustment Mode by the method described in sub-item 1-1 from page 43. ("Adjustment Procedure Start-up").
(2) From the first menu in Adjustment Mode, select FACT RESET adjustment code.
(3) Activate FACT RESET by pressing "Right" cursor key once.
(4) The procedure of the FACTORY RESET process is the following and the DATA table is shown next.

Process of FACTORY RESET operation.

① A screen is colored **magenta** when FACTORY RESET start.
② A screen is colored **green** when FACTORY RESET finish normally.
③ A screen is colored **RED** when FACTORY RESET finish abnormally.

(5) After FACTORY RESET, it should be unplug AC cord.Unplug and plug AC cord and then all settings and data are updated.

(6) When PDP turns ON , it will tune CH03 this is the complete operation of FACTORY RESET process.

BACK TO ADJUSTMENTS

9 . DATA TABLE OF SETTING FOR DELIVERY

USER Control Initialization
Settings for delivery (FACTORY RESET)

Function	Initial Data	Condition	P42T501	P42H401 P42H4011
Input Mode	Air		X	X
Channel	03/03-1 ch		X	X
Favorite Channels	Not Registered		X	X
PIP On/Off	Off		X	—
PIP Mode	SPLIT		X	—
POP Position	Middle Right		—	—
PIP Position	Bottom Right		—	—
Freeze Mode	Main Freeze (1pix)		X	—
Photo Mode	Off		X	—
Rotate	No Rotate		X	—
Slideshow Interval	5 sec		X	—
Master Volume	20 Step		X	X
Video				
Picture Mode	Day(Dynamic)		X	X
Contrast (White Level)	100%		X	X
Brightness (Black Level)	50%		X	X
Color	58%		X	X
Tint	CENTER		X	X
Sharpness	50%		X	X
Motion Sharpness	High		—	—
Back Light	100%		—	—
Color Temperature	High		X	X
Black Enhancement	Off		X	X
Contrast Mode	Dynamic		X	X
Noise Reduction	Low		X	X
Cross Color NR	Off		—	—
MPEG-NR	Off		X	X
Auto Movie Mode	Off	ANT	X	X
	On	Input	X	X
	Smooth2	ANT	—	—
	Smooth1	Input	—	—
Color Space	Wide		—	—
Color Management				
Set User Colors	Off		—	—
Magenta	±0		—	—
Red	±0		—	—
Yellow	±0		—	—
Green	±0		—	—
Cyan	±0		—	—
Blue	±0		—	—
Color Decoding				
RGB	RGB		—	—
Red	50%		—	—
Green	50%		—	—
Color	62%		—	—
Tint	Center		—	—
Auto Color	Off		—	—

BACK TO ADJUSTMENTS

9. SETTING for Delivery (continued)

Function	Initial Data	Condition	P42T501	P42H401 P42H4011
White Balance				
Red Drive	100%		—	—
Green Drive	100%		—	—
Blue Drive	100%		—	—
Red Cutoff	50%		—	—
Green Cutoff	50%		—	—
Blue Cutoff	50%		—	—
Aspect				
Auto Aspect	Off		X	X
Mode	4:3 Expanded	4:3	X	X
	16:9 Standard1	16:9	X	X
Vertical Position	0		X	X
Black Side Panel	Off		X	X
Reset Video Settings	—		X	X
Audio				
Treble	50%		X	X
Bass	50%		X	X
Balance	CENT		X	X
Surround	Off		X	X
Bass Boost	On		X	X
Audio Source	Stereo	Analog Broadcast	X	X
Internal Speakers	On		X	X
Auto Noise Cancel	Off	Analog Broadcast	X	X
Perfect Volume	Off		X	X
Loudness	Off		X	X
Language	1 [Unknown]	DTV	X	X
Digital Output	Dolby Digital	DTV	X	X
DRC	On	DTV	X	X
Channel Manager				
Signal Meter				
Channel	—		X	X
Strength	—		X	X
Peak	—		X	X
SNR	—		X	X
OOB Lock/Unlock	—		—	—
OOB SNR	—		—	—
OOB Frequency	—		—	—
Auto Channel Scan				
Source	Air		X	X
Reset	—		X	X
Start	—		X	X
Channel List				
FAV	Not Set		X	X
CH#	Air/Cable:2-13CH		X	X
Scan	On		X	X
Lock	Off		X	X
ID	—		X	X

BACK TO ADJUSTMENTS

9. SETTING for Delivery (continued)

Function	Initial Data	Condition	P42T501	P42H401 P42H4011
Locks				
Change Access Code	–		X	X
Engage Lock				
Set Channel Lock	All Unlock		X	X
Set Front Panel Lock	Unlock		X	X
Movie Ratings	All Unlock		X	X
TV Ratings	All Unlock		X	X
Canadian Ratings (Eng.)	All Unlock		X	X
Canadian Ratings (Frn.)	All Unlock		X	X
Region 5	–		X	X
Timers				
Set the Clock				
Time Zone	PST		X	X
Date	Jan 01 200 7		X	X
Time	--:-- AM (Not set)		X	X
Automatically Adjust Clock for Daylight Savings Changes.	off		X	X
Set Sleep Timer	0:00 (off)		X	X
Set Day/Night Timer				
Day (Normal) Mode On	Off/AM 6:00		X	X
Day (Dynamic) Mode On	Off/PM12:00		X	X
Night Mode On	Off/PM 6:00		X	X
Set Event Timer			X	X
Event1(2/3/4)	Not set		X	X
Start Time	--:-- AM (Not set)		X	X
End Time	--:-- AM (Not set)		X	X
Repeat	Jan 01 2006 (Once)		X	X
CH#	–		X	X

9. SETTING for Delivery (continued)

Function	Initial Data	Condition	P42T501	P42H401 P42H4011
Setup				
Menu Preference				
Set The Language	English		X	X
Set The Menu Background	Shaded		X	X
Set The Screen Saver			X	X
Main Picture Moving	Option 1		X	X
Image Power	Max		X	X
Screen Wipe	–		X	X
Automatic Power Saving	Yes		X	X
Set The Power Saving			–	–
Image Power	Max		–	–
Automatic Power Saving	Yes		–	–
Set The Inputs				
Input1 Rename	None		X	X
Input2 Rename	None		X	X
Input3 Rename	None		X	X
Input3 Auto Link (Auto/Off)	Off		X	X
Input Front Rename	None		X	X
HDMI1 Rename	None		X	X
HDMI2 Rename	None		X	X
HDMI Front Rename	None		X	X
Set the AV Net	(Wizard will be starting.)		–	–
Set Closed Caption				
Caption Display	Auto		X	X
Analog				
Mode	Captions		X	X
Channel	Channel1		X	X
Digital				
Language	1 [Unknown]		X	X
Font	Default		X	X
Size	Standard		X	X
Style	Standard		X	X
Set The IR OUT				
IR Out	Normal Length		–	–
Set The Quick Start Options	off		X	X
Reset The Software				
MMC Software Upgrade	–		X	X
Reset TV Settings	No		X	X
Power Swivel	Locked		–	–

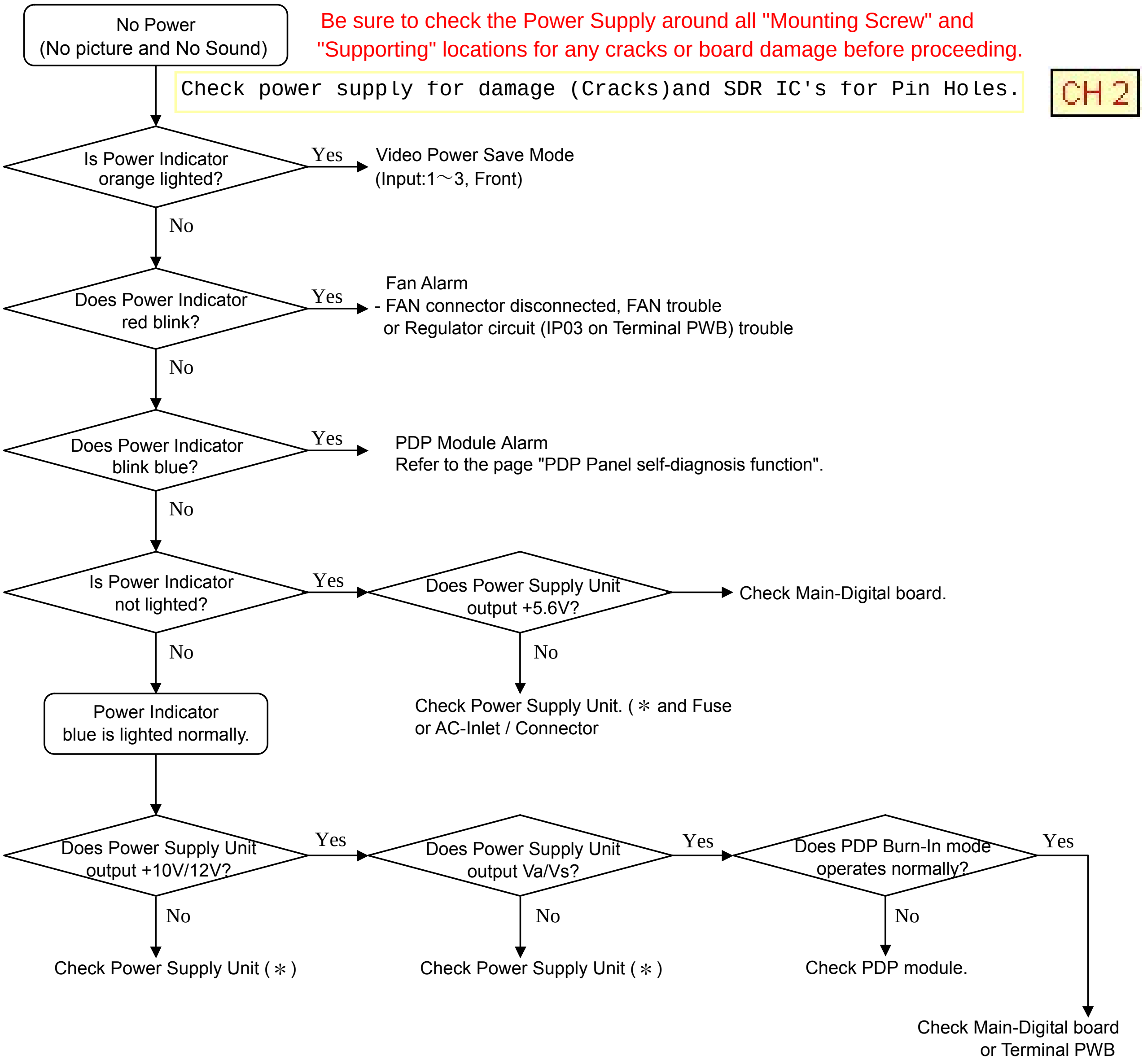
BACK TO ADJUSTMENTS

TROUBLESHOOTING FLOW CHARTS

POWER SUPPLY TROUBLESHOOTING

Be sure to check the Power Supply around all "Mounting Screw" and "Supporting" locations for any cracks or board damage before proceeding.

`Check power supply for damage (Cracks)and SDR IC's for Pin Holes.` CH 2


No Power
(No picture and No Sound)
Is Power Indicator orange lighted?
Yes
Video Power Save Mode
(Input:1～3, Front)
No
Does Power Indicator red blink?
Yes
Fan Alarm
- FAN connector disconnected, FAN trouble
or Regulator circuit (IP03 on Terminal PWB) trouble
No
Does Power Indicator blink blue?
Yes
PDP Module Alarm
Refer to the page "PDP Panel self-diagnosis function".
No
Is Power Indicator not lighted?
Yes
Does Power Supply Unit output +5.6V?
Check Main-Digital board.
No
Check Power Supply Unit. (＊ and Fuse
or AC-Inlet / Connector
No
Power Indicator blue is lighted normally.
Does Power Supply Unit output +10V/12V?
Yes
Does Power Supply Unit output Va/Vs?
Yes
Does PDP Burn-In mode operates normally?
Yes
No
Check Power Supply Unit (＊)
No
Check Power Supply Unit (＊)
No
Check PDP module.
Check Main-Digital board
or Terminal PWB

(＊) Power-On Control Signal for Power Supply Unit

(1) AC switch : ON → PSU outputs STBY+5V.

(2) POWER_1 (CN63 [6]) : High → PSU outputs +5.6V.

(3) POWER_2 (CN63 [7]) : High → PSU outputs +10V and +12V.

(4) Vcego (CN68 Pin 7) : High → PSU outputs Vcc+5.1V for PDP Panel.

(5) Vsago (CN68 Pin 8) : High → PSU outputs Va and Vs for PDP Panel.

If any control signal does not rise, PSU cannot output the voltage.
- POWER_1/2 : not rise ----- Main-Digital PWB trouble
- Vcego/Vsago : not rise ----- PDP Panel Module (Logic PWB) trouble
  However, Vcego rises when PNLRST (EC01 [43] at Main-Digital board) is High, and
  Vsago rises when PNLoN (EC01 [42] at Main-Digital board) is also High.

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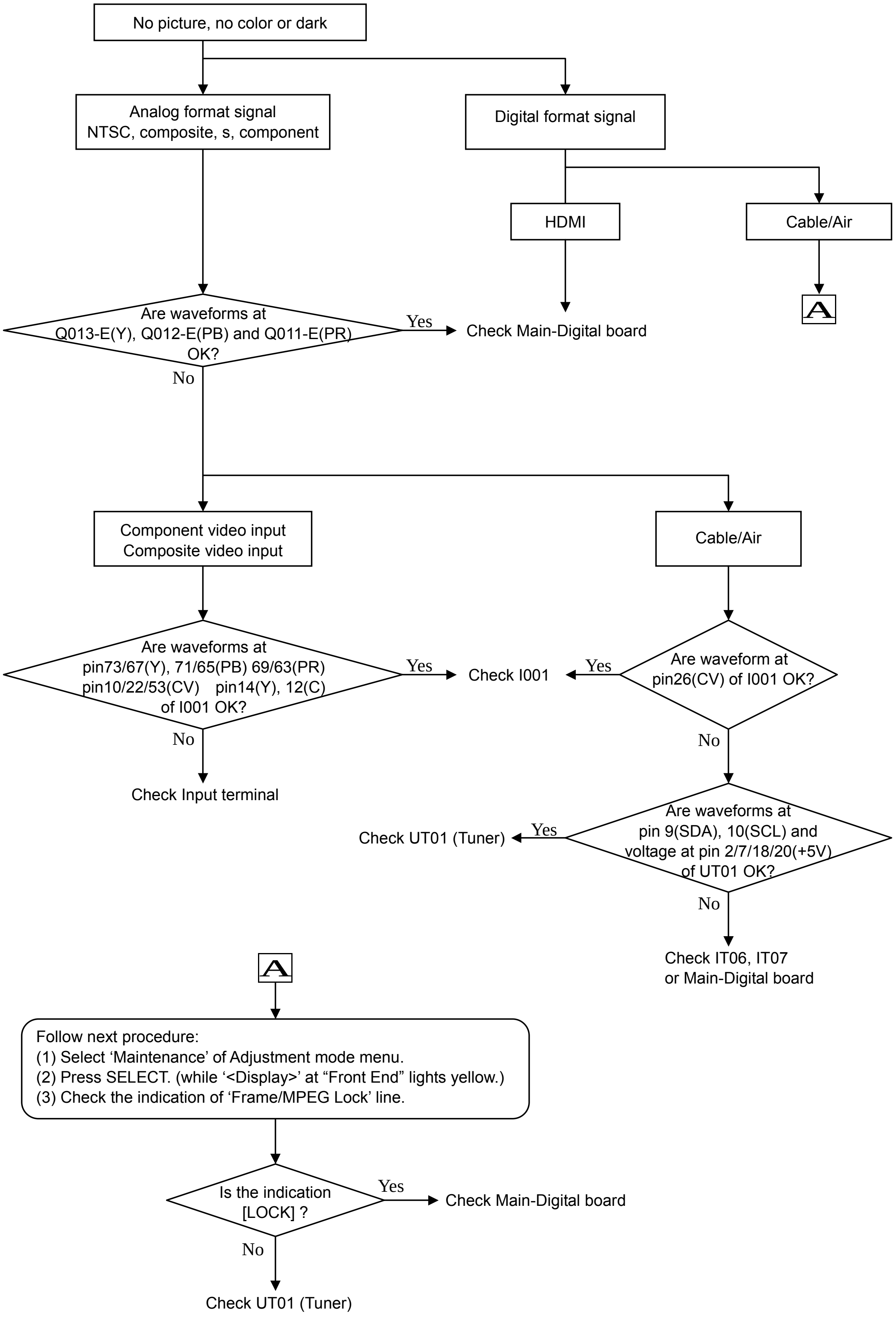
TROUBLESHOOTING FLOW CHARTS

[Terminal PWB circuit trouble shooting] (For in depth Troubleshooting Flowchart see page 116)

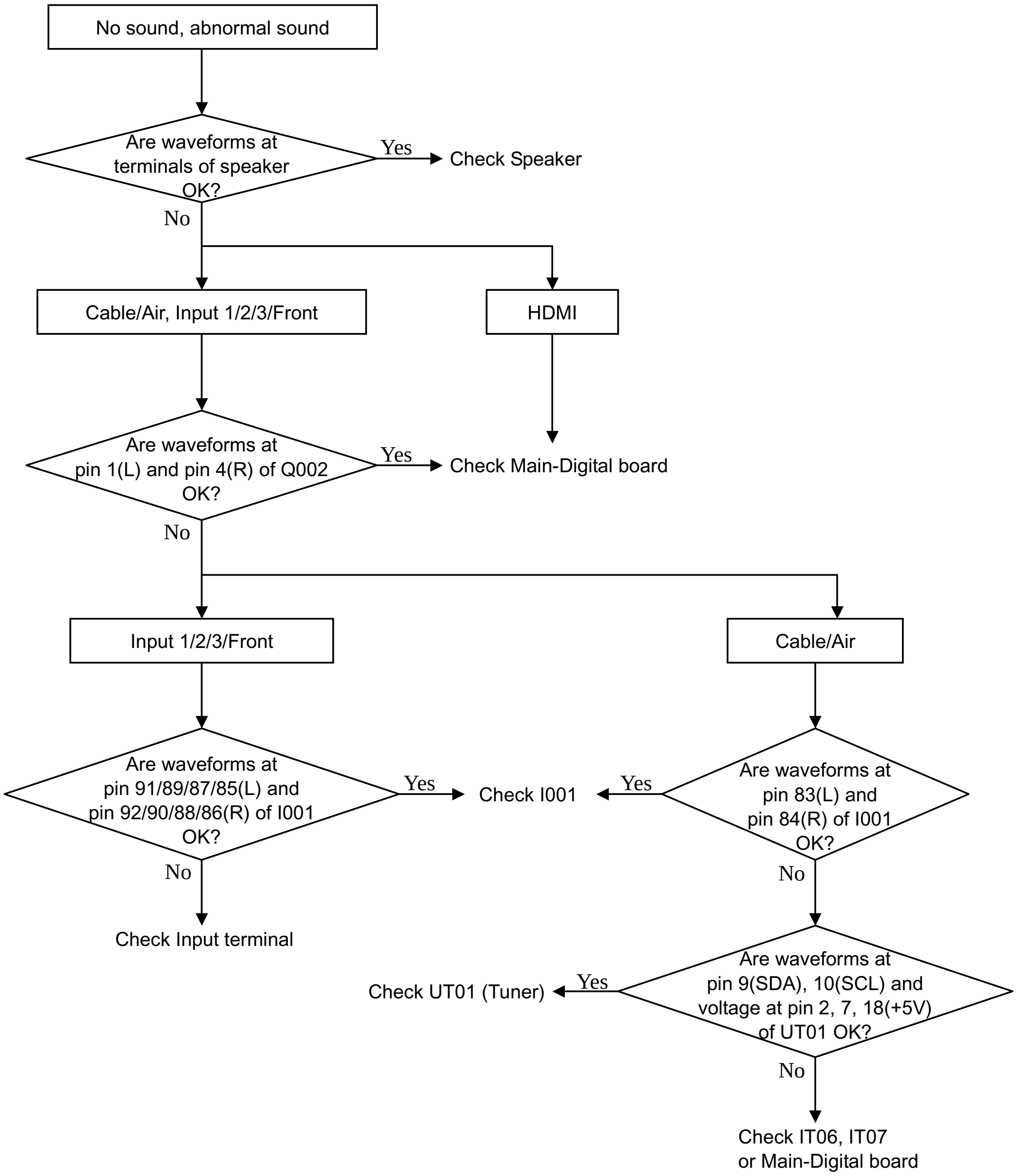

No picture, no color or dark
Analog format signal
NTSC, composite, s, component
Digital format signal
HDMI
Cable/Air
A
Are waveforms at
Q013-E(Y), Q012-E(PB) and Q011-E(PR)
OK?
Yes
Check Main-Digital board
No
Component video input
Composite video input
Cable/Air
Are waveforms at
pin73/67(Y), 71/65(PB) 69/63(PR)
pin10/22/53(CV) pin14(Y), 12(C)
of I001 OK?
Yes
Check I001
Yes
Are waveform at
pin26(CV) of I001 OK?
No
Check Input terminal
No
Are waveforms at
pin 9(SDA), 10(SCL) and
voltage at pin 2/7/18/20(+5V)
of UT01 OK?
Yes
Check UT01 (Tuner)
No
Check IT06, IT07
or Main-Digital board
A

Follow next procedure:
(1) Select ‘Maintenance’ of Adjustment mode menu.
(2) Press SELECT. (while ‘<Display>’ at “Front End” lights yellow.)
(3) Check the indication of ‘Frame/MPEG Lock’ line.

Is the indication
[LOCK] ?
Yes
Check Main-Digital board
No
Check UT01 (Tuner)

TROUBLESHOOTING FLOW CHARTS

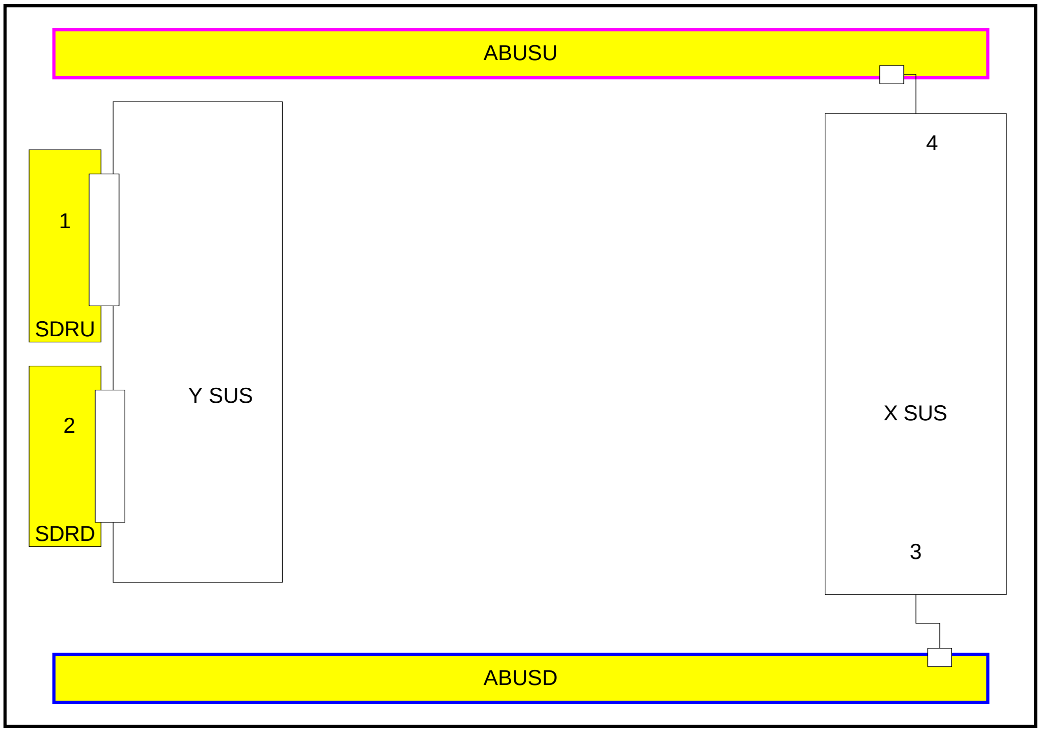
[Terminal PWB circuit trouble shooting] (For in depth Troubleshooting Flowchart see page 121)


No sound, abnormal sound
Are waveforms at terminals of speaker OK?
Yes
Check Speaker
No
Cable/Air, Input 1/2/3/Front
HDMI
Are waveforms at pin 1(L) and pin 4(R) of Q002 OK?
Yes
Check Main-Digital board
No
Input 1/2/3/Front
Cable/Air
Are waveforms at pin 91/89/87/85(L) and pin 92/90/88/86(R) of I001 OK?
Yes
Check I001
Yes
Are waveforms at pin 83(L) and pin 84(R) of I001 OK?
No
Check Input terminal
No
Check UT01 (Tuner)
Yes
Are waveforms at pin 9(SDA), 10(SCL) and voltage at pin 2, 7, 18(+5V) of UT01 OK?
No
Check IT06, IT07 or Main-Digital board

SYMPTOM	POSSIBLE CAUSE	Probable Board
NO POWER, NO LED LIT	Check that unit is plugged into live outlet and that main power switch of unit is turned on. Check fuse on Filter pwb. Replace power supply.	POWER SUPPLY
Blue led blinking always	Turn units master power switch off and back on (ac reset). If ac reset does not solve the problem then replace the main digital pwb.	MAIN DIGITAL
Power led Red. Panel power or RC power does not turn unit on to .(Blue LED)	Suspect main digital pwb.	MAIN DIGITAL
Blue LED on, No picture.	Power supply is working. See troubleshooting of X &YSUS pwbs, SDR and Abus pwbs. LINK	
No Audio	Check 10volt supply to main digital pwb.Connector PPM3 pins 3,4 or 5. If 10volt missing disconnect PPM3 and check CNPPS pins 13,14 or 15. If voltage missing suspect power supply. If voltage present suspect Main Digital PWB.	POWER SUPPLY OR MAIN DIGITAL
Video Problem	If problem is with tuner, Check monitor out. If video missing suspect Sub Digital. If problem is with Composite or componet suspect sub digital pwb If problem is with HDMI suspect Main Digital	SUB DIGITAL SUB DIGITAL MAIN DIGITAL
Top Half of Picture Missing	Check connector from SDR-U to Panel , remove and reinsert. If problem is same change SDR-U PWB	SDR-U
Bottom Half of Picture Missing	Check connector from SDR-D to Panel , remove and reinsert. If problem is same change SDR-D PWB	SDR-D
1 Horz Pixel Line Across the screen, Horz Bar or multi horz	Check the SDR pwb connector associated with where the line is. Remove and Re insert	IF CONNECTOR NOT THE PROBLEM THEN PANEL
HDMI Problems	Check Signal Source for Proper HDMI output. Check other HDMI inputs. Possible cause main Digital Pwb.	MAIN DIGITAL PWB
Tuner problems	If problem is with tuner only. Suspect Sub Digital PWB	SUB DIGITAL PWB
Composite, Componet problems	If problem with Composite or Componet only suspect Sub Digital PWB	SUB DIGITAL PWB

We have a procedure to isolate panel PWB's, which is a separate sequence of tests.

If Power Supply is protecting itself, easy to tell when we measure Va and Vs and it will come up and then will go down. These voltages go together with the Vsego and Vsago from the Logic PWB assy. These voltages will too come up and go down as well, these are the voltages turning the Vs and Va on.



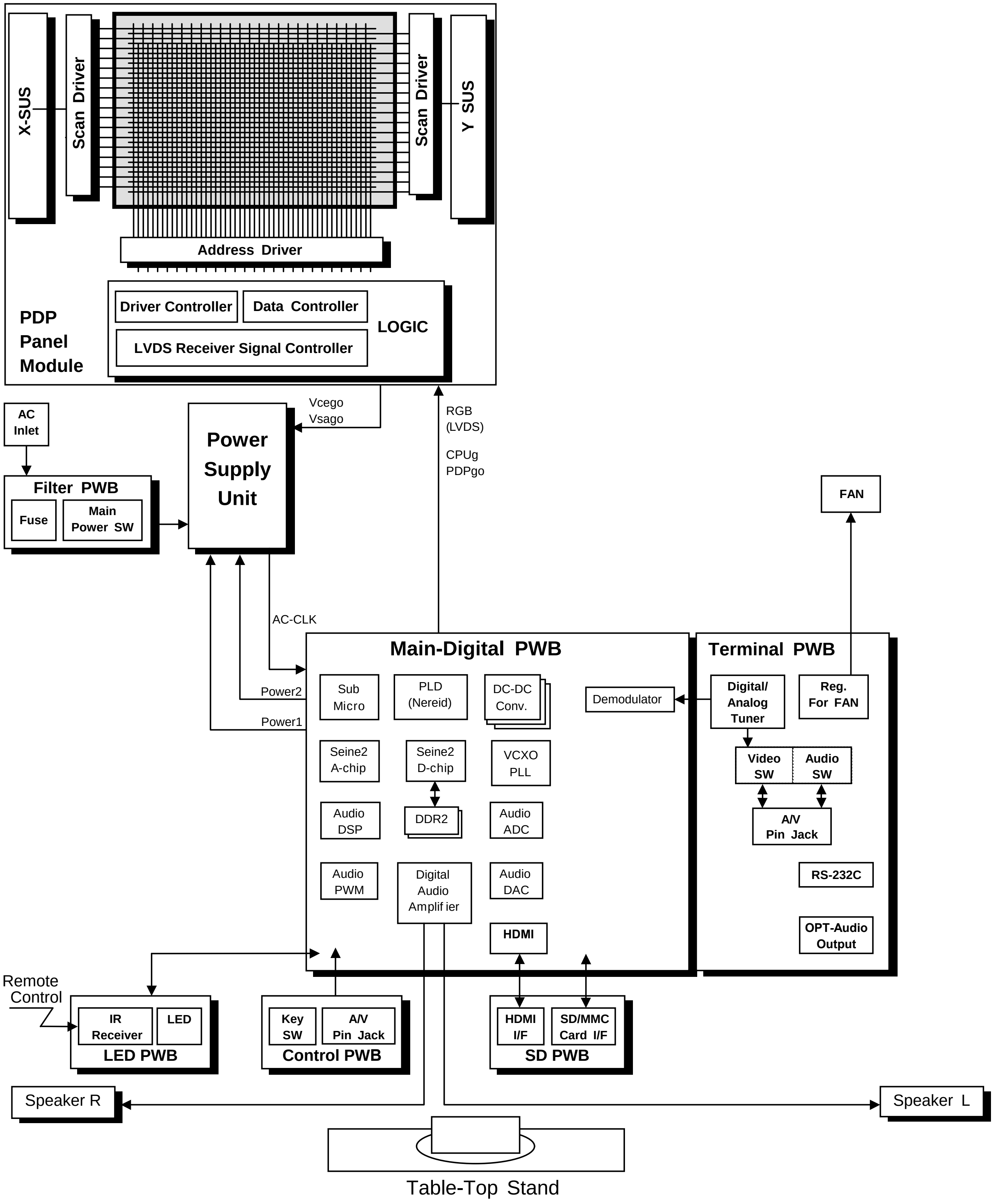
On this lay out, have technicians start eliminating the SDR PWBs first. Remove the lower SDRd from Y SUS and try turning TV on. If this SDR is causing the problem (protection), TV will come on and will give you a good picture on the upper half and VA, VS will stay up. Do the same procedure for the upper SDRu, if the upper SDR is the problem then you will have a picture on the lower half and VA, VS will stay up. If neither of the SDR's correct the protection problem, remove connector 3 to lower ABUS pwb's and check VS, VA voltage, if still protected remove connector 4 to upper ABUS pwb's and check VS, VA voltage. (Some models do not have upper ABUS pwb's) Remember to remove and reinsert connectors CN63 & CN64 on PS pwb after each test, This will reset the protection circuit.

MAINTENANCE MODE ITEM'S DESCRIPTION TABLE.

In the Adjustment mode menu there is the Maintenance Mode sub-Menu of the Digital Module. It is useful for system diagnostics. The next table gives a brief explanation of its items.

Group	No	Item	Indicate format or choices	Contents
Front End	1	FEC	[LOCK] [UNLOCK]	Status of Forward Error Correction
	2	Modulation Type	[8VSB], [64QAM] [256QAM]	Modulation type
	3	IF Error	+/-[xxxxx]Hz	IF Frequency offset is updated every second
	4	Signal Strength	[0-100]	Signal level is scaled from 0 to 100. It is updated every second.
	5	Tuned CH	DTV: [xx] ch CATV-STD: [xx] ch CATV-HRC: [xx] ch CATV-IRC: [xx] ch	Tuned physical channel.
	6	Symbol Rate	[xxxxxxx] sym/sec	Symbol rate is updated every second
	7	SNR	[xx.xx] dB	Signal to noise ratio is updated every second.
	8	BER Before Correct	[x.xx e-xx]	Bit error rate before Reed-Solomon error correction is updated every second
	9	BER After Correct	[x.xx e-xx]	Bit error rate after Reed-Solomon error correction is updated every second
TS check	1	Video PID (HEX)	[xxxx]	Video PID in TS (Transport Stream)
	2	Audio PID (HEX)	[xxxx]	Audio PID in TS
	3	PCR PID (HEX)	[xxxx]	PCR PID in TS
Video Format	1	Video Format	[1080I] [720P] [480P] [480I] [240P]	Video format of selected program
	2	Frame Rate	[23.97] [24] [29.97] [30] [59.94] [60]	Frame rate of selected program
	3	Aspect Ratio	[16:9] [4:3]	Picture aspect ratio of selected program
	4	Pan Scan	H: [Yes] [No] V: [Yes] [No]	Existence of Horizontal/vertical Pan & Scan setting
	5	3: 2 Pull-down	[ON] [OFF]	Status of 3:2 pull-down function
	6	Resolution	H: [1920] [1280] [704] [640] V: [1080] [720] [480]	Horizontal and vertical picture resolution in decimal
	7	Bit Rate / VBV Bf	[xx.xxx] Mbps [xxxxxx] KB	Video encode bit rate / VBV buffer rate
	8	Copy Guard (D)	[Free] [1 time] [Never] [Stop]	Copy guard status of digital output ([stop] is not available for Digital output)
	9	Copy Guard (A)	CGMS-A: [20bit; HEX 5 digit] Macrovision: [Yes] [No]	Copy guard status of Analog output
Audio Format	1	Sampling Frequency	[48 KHz] [44.1KHz] [32KHz]	Status of audio sampling frequency
	2	Channel Mode	[MONO] [STEREO] [DUAL] / MULTI-ST [2/1] [3/0] [2/2] [3/1] [3/2] [3/2+LFE]	Status of audio channel mode
	3	Timing Adjustment	[-2] [-1] [0] [+1] [+2]	For AV synchronization, the timing of the down mixing audio output is adjustable with 5 values.
	4	Audio Decode	[AC3] [MPEG Audio]	Status of audio decoding
Video Output	1	Video Output Setup	[Normal]	Status of NTSC video output for VCR recording. Display only [Normal] as fixed value because the video output only supports [Normal].
	2	NTSC Output Quality	[Weak] [Normal] [Strong]	Selection of vertical filter adapted to NTSC video output
	3	Brightness	Adjust: [-100 ~ +100%]	Adjustment of brightness control for UD OSD
	4	Contrast	Adjust: [-100 ~ +100%]	Adjustment of contrast control for UD OSD
System	1	Rcv Interrupt Rec.	[List Indication]	Received Interrupt Record. See Note 1
	2	Software Version	Main: [xxxxxxxx] 1394: [xxxxxx]	Software version of module control (Main) and IEEE1394 control (1394)
	3	MMC Download	[List Indication]	Download a software from MMC stored file list (See Note 2)
	4	Factory Settings	-----	Administration of the factory settings, and initialization of user and EPG cache.
	5	Serial No. Confirm	Manufacturer ID: [xx] Model ID: [xx] Serial No.: [xxxxxx] Check Sum: [xxxx]	Display of set of serial number data: manufacturer ID, model ID, serial No. and check sum.
	6	MMC/Sniffer Switch	[MMC] [Sniffer]	Selection of MMC socket mode between MMC and Sniffer. Restored to MMC by initialization of “Factory Settings”

CIRCUIT BLOCK DIAGRAM


X-SUS
Scan Driver
Scan Driver
Y SUS
Address Driver
PDP
Panel
Module
Driver Controller
Data Controller
LOGIC
LVDS Receiver Signal Controller
AC
Inlet
Filter PWB
Fuse
Main
Power SW
Power
Supply
Unit
Vcego
Vsago
RGB
(LVDS)
CPUg
PDPgo
FAN
AC-CLK
Power2
Power1
Main-Digital PWB
Sub
Micro
PLD
(Nereid)
DC-DC
Conv.
Demodulator
Seine2
A-chip
Seine2
D-chip
VCXO
PLL
Audio
DSP
DDR2
Audio
ADC
Audio
PWM
Digital
Audio
Amplif ier
Audio
DAC
HDMI
Terminal PWB
Digital/
Analog
Tuner
Reg.
For FAN
Video
SW
Audio
SW
A/V
Pin Jack
RS-232C
OPT-Audio
Output
Remote
Control
IR
Receiver
LED
LED PWB
Key
SW
A/V
Pin Jack
Control PWB
HDMI
I/F
SD/MMC
Card I/F
SD PWB
Speaker R
Speaker L
Table-Top Stand

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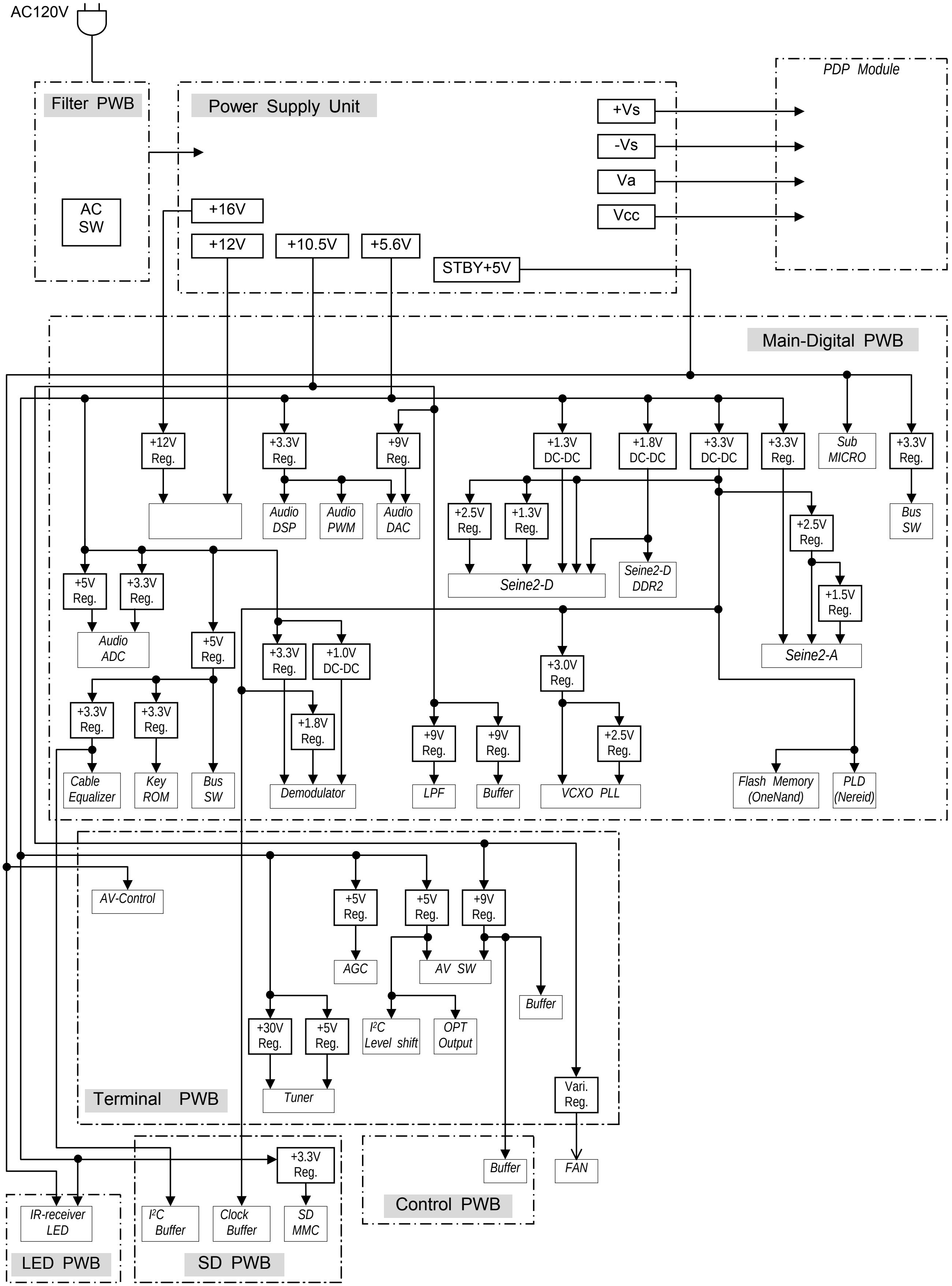
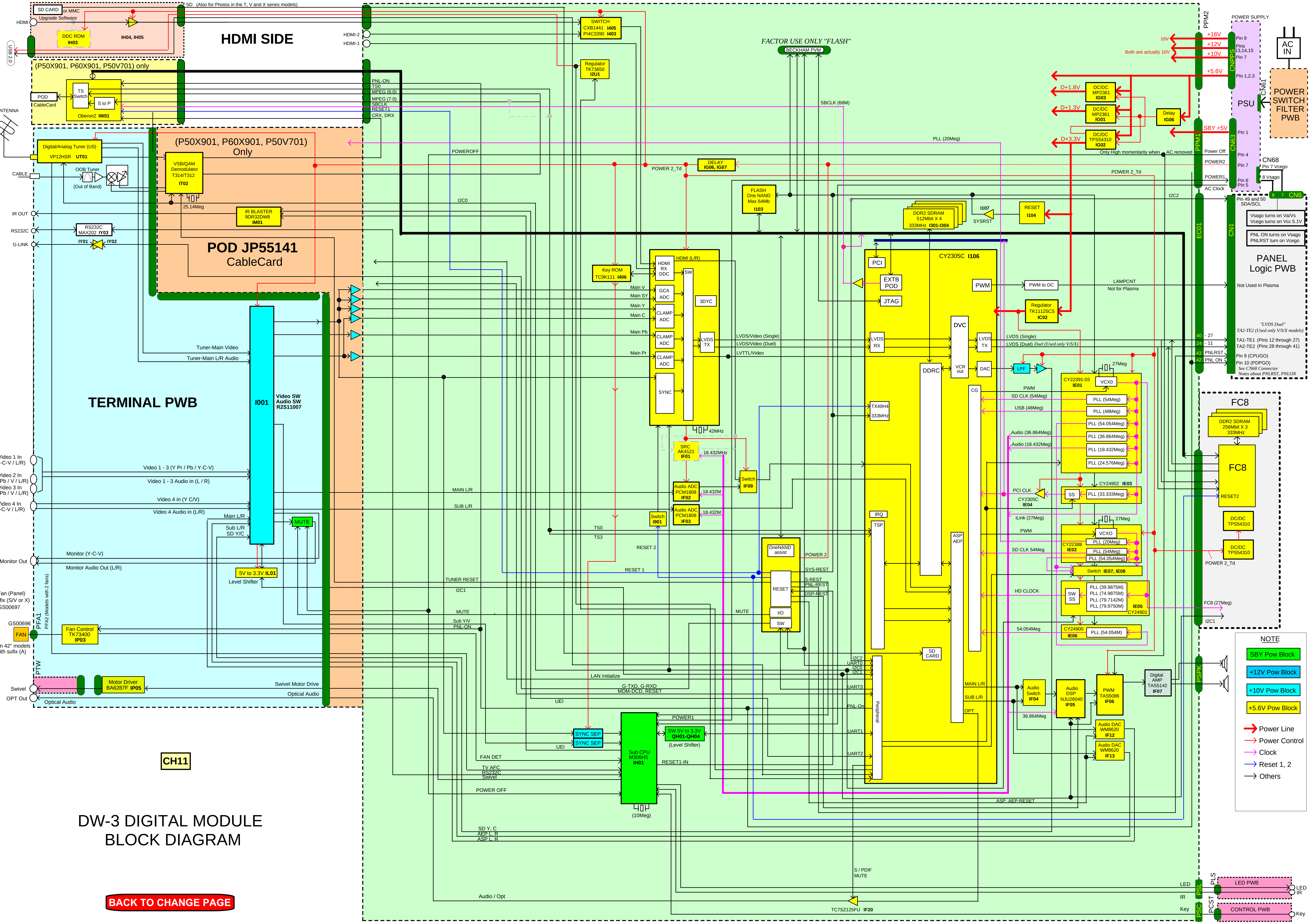
POWER SYSTEM BLOCK DIAGRAM


AC120V
Filter PWB
AC SW
Power Supply Unit
+Vs
-Vs
Va
Vcc
PDP Module
+16V
+12V
+10.5V
+5.6V
STBY+5V
Main-Digital PWB
+12V Reg.
+3.3V Reg.
+9V Reg.
+1.3V DC-DC
+1.8V DC-DC
+3.3V DC-DC
+3.3V Reg.
Sub MICRO
+3.3V Reg.
Audio DSP
Audio PWM
Audio DAC
+2.5V Reg.
+1.3V Reg.
+2.5V Reg.
Bus SW
Seine2-D
Seine2-D DDR2
+1.5V Reg.
+5V Reg.
+3.3V Reg.
Audio ADC
+5V Reg.
+3.3V Reg.
+1.0V DC-DC
+3.0V Reg.
Seine2-A
+3.3V Reg.
+3.3V Reg.
+1.8V Reg.
+9V Reg.
+9V Reg.
+2.5V Reg.
Cable Equalizer
Key ROM
Bus SW
Demodulator
LPF
Buffer
VCXO PLL
Flash Memory (OneNand)
PLD (Nereid)
AV-Control
+5V Reg.
+5V Reg.
+9V Reg.
AGC
AV SW
Buffer
+30V Reg.
+5V Reg.
I²C Level shift
OPT Output
Tuner
Terminal PWB
Vari. Reg.
+3.3V Reg.
Buffer
FAN
IR-receiver LED
LED PWB
I²C Buffer
Clock Buffer
SD MMC
SD PWB
Control PWB


HDMI SIDE
SD CARD
or MMC Upgrade Software
DDC ROM IH03
IH04, IH05
HDMI
USB 2.0
SD (Also for Photos in the T, V and X series models)
HDMI-2
HDMI-1
SWITCH CXB1441 I405 PI4C3390 I403
Regulator TK73650 I2U1
(P50X901, P60X901, P50V701) only
POD
CableCard
TS Switch
S to P
Oberon2 IW01
ANTENNA
PNL-ON
TS0
MPEG (6:0)
MPEG (7:0)
SBCLK
RESET1
CRX, DRX
FACTOR USE ONLY "FLASH"
BECKHAM PVM
SBCLK (66M)
Digital/Analog Tuner (US) VP12HSR UT01
CABLE
OOB Tuner
(Out of Band)
(P50X901, P60X901, P50V701) Only
VSB/QAM Demodulator T314/T312 IT02
25.14Meg
POWEROFF
POWER 2_Td
DELAY IG06, IG07
PLL (20Meg)
IR OUT
RS232C
RS232C MAX202 IY03
G-LINK
IY01
IY02
IR BLASTER 9DR32DW8 IM01
I2C0
POD JP55141
CableCard
FLASH One NAND Max 64Mb I103
DDR2 SDRAM 512Mbit X 4 333MHz I301-I304
I107
SYSRST
RESET I104
Key ROM TC9K111 I406
HDMI (L/R)
HDMI RX DDC
SW
GCA ADC
CLAMP ADC
3DYC
LVDS TX
SYNC
Main V
Main SY
Main Y
Main C
Main Pb
Main Pr
CY2305C I106
PCI
EXTB POD
JTAG
PWM
PWM to DC
LAMPCNT
Not for Plasma
Regulator TK11125CS IC02
DVC
DDRC
VCR out
LVDS RX
LVDS TX
DAC
LPF
LVDS/Video (Single)
LVDS/Video (Duel)
LVTTL/Video
LVDS (Single)
LVDS (Duel) Duel (Used only V/S/X)
TERMINAL PWB
Tuner-Main Video
Tuner-Main L/R Audio
I001
Video SW Audio SW R2S11007
42MHz
SRC AK4121 IF01
18.432MHz
Switch IF09
Audio ADC PCM1808 IF02
Audio ADC PCM1808 IF03
18.432M
Switch I901
TX49H4 333MHz
CG
IRQ
TSP
ASP AEP
CY22391-03 IE01
VCXO
27Meg
PLL (54Meg)
PLL (48Meg)
PLL (54.054Meg)
PLL (36.864Meg)
PLL (18.432Meg)
PLL (24.576Meg)
PWM
SD CLK (54Meg)
USB (48Meg)
Audio (36.864Meg)
Audio (18.432Meg)
PCI CLK
CY2305C IE04
SS
PLL (33.333Meg)
CY24902 IE03
iLink (27Meg)
CY22388 IE02
PLL (20Meg)
PLL (54Meg)
PLL (54.054Meg)
SD CLK 54Meg
Switch IE07, IE08
HD CLOCK
PLL (39.9875M)
PLL (74.9875M)
PLL (79.7142M)
PLL (79.9750M)
IE05 CY24901
54.054Meg
CY24900 IE06
PLL (54.054M)
Video 1 In (Y-C-V / L/R)
Video 2 In (Y-Pr-Pb / V / L/R)
Video 3 In (Y-Pr-Pb / V / L/R)
Video 4 In (Y-C-V / L/R)
Video 1 - 3 (Y Pr / Pb / Y-C-V)
Video 1 - 3 Audio in (L / R)
Video 4 in (Y C/V)
Video 4 Audio in (L/R)
MAIN L/R
SUB L/R
Main L/R
Sub L/R
SD Y/C
MUTE
TS0
TS3
RESET 2
RESET 1
OneNAND assist
POWER 2
SYS-REST
S-REST
PNL-REST
DSP-REST
RESET
I/O
SW
Monitor Out
Monitor (Y-C-V)
Monitor Audio Out (L/R)
5V to 3.3V IL01
Level Shifter
TUNER RESET
I2C1
2nd Fan (Panel) with sufix (S/V or X) GS00697
GS00696
FAN
Not in 42" models with sufix (A)
PFA1
PFA2 (Models with 2 fans)
Fan Control TK73400 IP03
Sub Y/C
PNL-ON
SD CARD
I2C2
UART0
I2C0
I2C1
UART3
PNL-On
UART1
UART2
Peripheral
PTW
Swivel
OPT Out
Motor Driver BA6287F IP05
Swivel Motor Drive
Optical Audio
LAN Initialize
G-TXD, G-RXD
MDM-DCD, RESET
UEI
POWER1
SYNC SEP
SW 5V to 3.3V QH01-QH04
(Level Shifter)
Sub CPU M306H5 IH01
RESET1-IN
FAN DET
TV AFC
RS232C
Swivel
POWER OFF
(10Meg)
SD Y, C
AEP L, R
ASP L, R
ASP, AEP-RESET
MAIN L/R
SUB L/R
OPT
Audio Switch IF04
Audio DSP NJU26040 IF05
36.864Meg
PWM TAS5086 IF06
Digital AMP TAS5142 IF07
Audio DAC WM8620 IF12
Audio DAC WM8620 IF13
S / PDIF
MUTE
Audio / Opt
TC7SZ125FU IF20
LED
IR
Key
PLS
PSL
PCST
PSC
LED PWB
CONTROL PWB
LED
IR
Key
PSPK
PPM2
PPM1
EC01
CN1
CN63
CN6
CN68
CNPPS
CN61
POWER SUPPLY
PSU
+16V
+12V
+10V
+5.6V
16V
Both are actually 10V
Pin 9
Pins 13,14,15
Pin 7
Pin 1,2,3
Pin 1
Pin 4
Pin 7
Pin 6
Pin 5
AC IN
POWER SWITCH FILTER PWB
D+1.8V
D+1.3V
D+3.3V
DC/DC MP2361 IG03
DC/DC MP2361 IG01
DC/DC TPS54310 IG02
Delay IG06
SBY +5V
Only High momentarily when AC removed
Power Off
POWER2
POWER1
AC Clock
Pin 7 Vcego
8 Vsago
I2C2
Pin 49 and 50 SDA/SCL
Vsago turns on Va/Vs Vcego turns on Vcc 5.1V
PNL ON turns on Vsago PNLRST turn on Vcego
PANEL Logic PWB
Not Used In Plasma
"LVDS Duel"
TA2-TE2 (Used only V/S/X models)
TA1-TE1 (Pins 12 through 27)
TA2-TE2 (Pins 28 through 41)
Pin 9 (CPUGO)
Pin 10 (PDPGO)
See CN68 Connector Notes about PNLRST, PNLON
40 - 27
24 - 11
43 PNLRST
42 PNL ON
FC8
DDR2 SDRAM 256Mbit X 3 333MHz
RESET2
DC/DC TPS54310
POWER 2_Td
FC8 (27Meg)
I2C1
NOTE
SBY Pow Block
+12V Pow Block
+10V Pow Block
+5.6V Pow Block
Power Line
Power Control
Clock
Reset 1, 2
Others

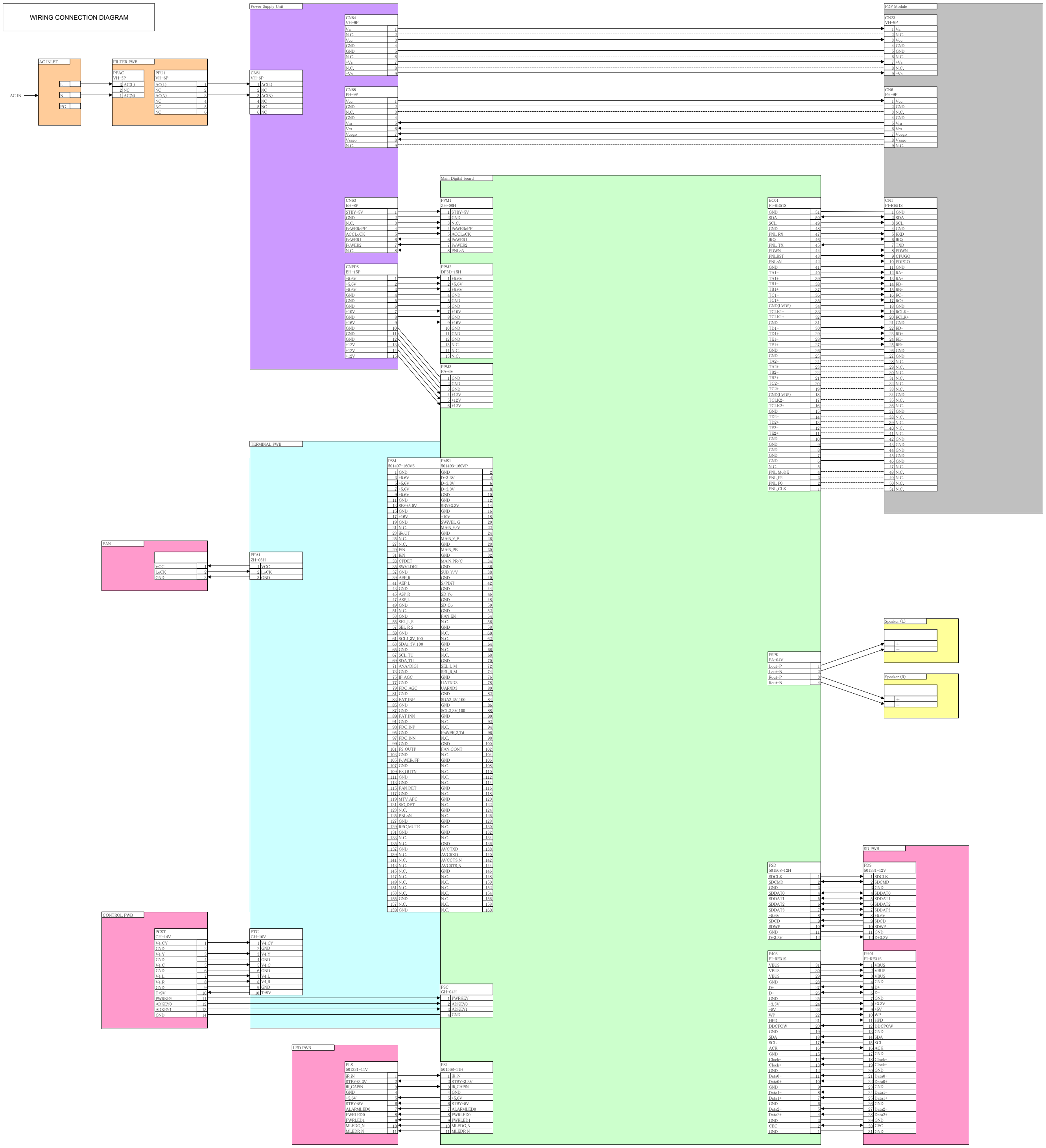
CH11

DW-3 DIGITAL MODULE BLOCK DIAGRAM

BACK TO CHANGE PAGE

]

CONNECTION DIAGRAM


WIRING CONNECTION DIAGRAM
AC IN
AC INLET
L
N
FG
FILTER PWB
PFAC VH-3P
PPU1 VH-6P
Power Supply Unit
CN61 VH-6P
CN64 VH-9P
CN68 PH-9P
CN63 EH-8P
CNPPS EH-15P
PDP Module
CN23 VH-9P
CN6 PH-9P
CN1 FI-RE51S
Main Digital board
PPM1 ZH-08H
PPM2 DF3D-15H
PPM3 PA-6V
EC01 FI-RE51S
TERMINAL PWB
PSM 501497-160VS
PMS1 501493-160VP
FAN
PFA1 ZH-03H
PSPK PA-04V
Speaker (L)
Speaker (R)
CONTROL PWB
PCST GH-14V
PTC GH-10V
PSC GH-04H
LED PWB
PLS 501331-11V
PSL 501568-11H
SD PWB
PSD 501568-12H
PDS 501331-12V
P403 FI-RE31S
PH01 FI-RE31S

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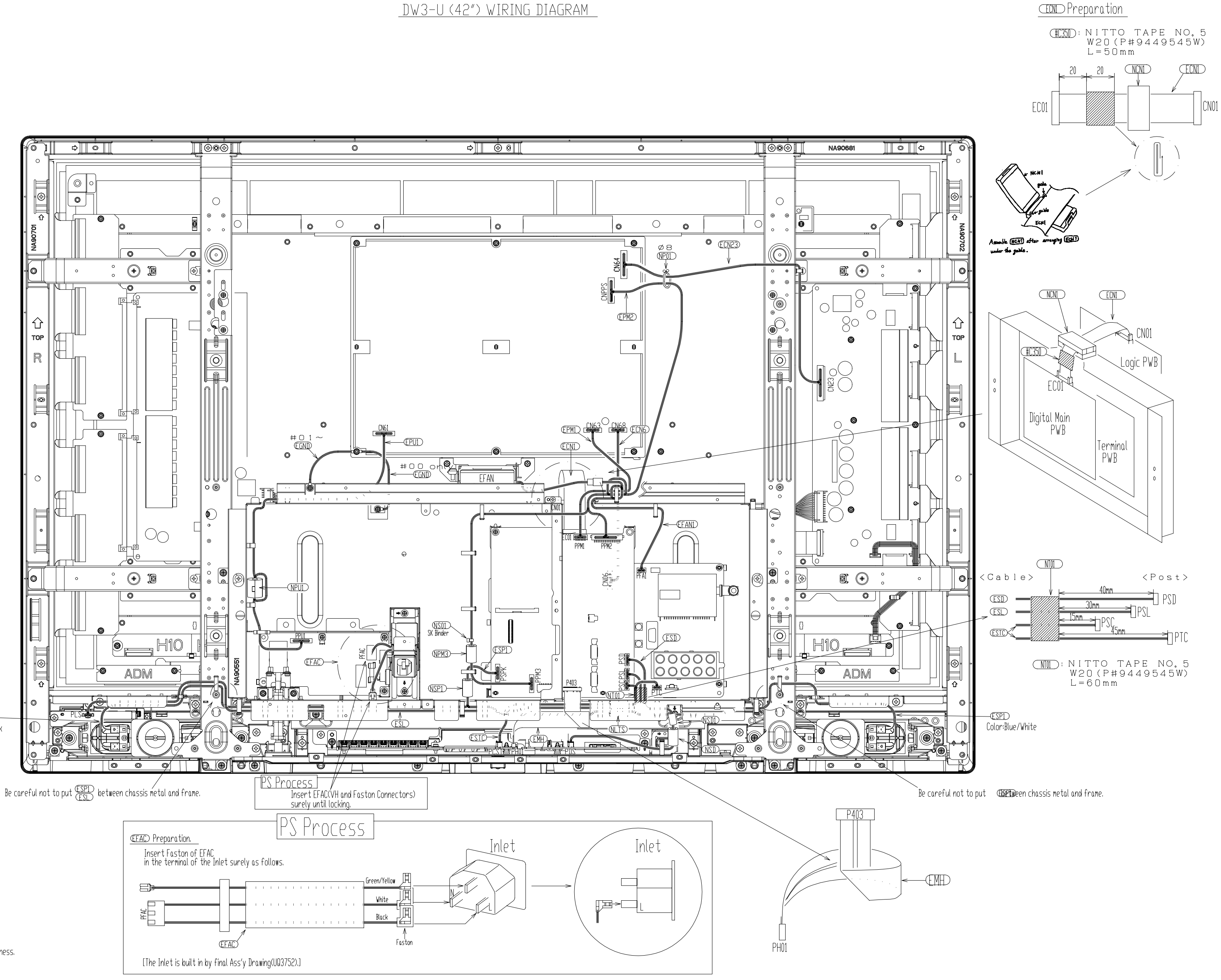
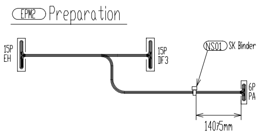
FINAL WIRING DIAGRAM

Table of Using cable

Connector wire		Plug Pin 1		Plug Pin 2	
Name	Assy List	Board or Location	Name	Board or Location	Name
ESTC	Final Ass'y	CONTROL	PCST	TERMINAL	PTC
				SUB DIGITAL	PSC
ESL	Final Ass'y	SUB DIGITAL	PSL	LED	PLS
ESD	Final Ass'y	SUB DIGITAL	PSD	SD	PDS
EFAN1	Final Ass'y	TERMINAL	PFA1	EFAN	-
ESP1	Final Ass'y	MAIN_DIGITAL	PSPK	SP-L/R	SP-L SP-R
EPM1	Final Ass'y	POWER	CN63	MAIN DIGITAL	PPM1
EPM2	Final Ass'y	POWER	CNPPS	MAIN DIGITAL	PPM2 PPM3
EPU1	Final Ass'y	POWER	CN61	FILTER	PPU1
ECN23	Final Ass'y	POWER	CN64	PANEL X-SUS	CN23
ECN6	Final Ass'y	POWER	CN68	PANEL LOGIC	CN06
ECN1	Final Ass'y	MAIN_DIGITAL	EC01	PANEL LOGIC	CN01
EFAC	Final Ass'y	FILTER	PFAC	AC INLET	-
		CHASSIS METAL	GND		
EGND	Final Ass'y	CHASSIS METAL	-	POWER	-
EMH	Final Ass'y	MAIN_DIGITAL	P403	HDMI	PH01


DW3-U (42") WIRING DIAGRAM
ECN1 Preparation
#C350 : NITTO TAPE NO.5
W20 (P#9449545W)
L=50mm
20
20
NCN1
ECN1
EC01
CN01
NCN1
guide
guide
ECN1
Assemble NCN1 after arranging ECN1 under the guide.
NCN1
ECN1
CN01
#C350
Logic PWB
EC01
Digital Main PWB
Terminal PWB
NT01
<Cable>
<Post>
ESD
ESL
ESTC
40mm
30mm
15mm
45mm
PSD
PSL
PSC
PTC
NT01 : NITTO TAPE NO.5
W20 (P#9449545W)
L=60mm
ESP1
Color:Blue/White
Be careful not to put ESP1 between chassis metal and frame.
ESP1
Color:Red/Black
Be careful not to put ESP1 ESL between chassis metal and frame.
NA90661
NA90701
NA90702
NA90551
TOP
R
L
H10
ADM
CN64
NP01
ECN23
CNPPS
EPM2
CN23
CN61
EPU1
EGND
EFAN
EPM1
CN63
CN68
ECN6
ECN1
CN01
EC01
PPM1
PPM2
EFAN1
CN06
PFA1
NPU1
PPU1
EFAC
PFAC
NS01
SK Binder
NPM3
ESP1
PSPK
PPM3
NSP1
P403
PSC
PSD
ESD
NT01
PTC
PSL
PLS
ESL
ESTC
EMH
PCST
PH01
PDS
NLTS
NSD1
NSD
PS Process
Insert EFAC(VH and Faston Connectors) surely until locking.
PS Process
EFAC Preparation.
Insert Faston of EFAC in the terminal of the Inlet surely as follows.
Green/Yellow
White
Black
PFAC
EFAC
Faston
Inlet
N
L
Inlet
L
[The Inlet is built in by final Ass'y Drawing(UQ3752).]
P403
EMH
PH01

*1 Regarding ECN6,
insert connectors while installing Power Supply PWB
in the panel.


EPM2 Preparation
15P
EH
15P
DF3
NS01 SK Binder
6P
PA
140±5mm

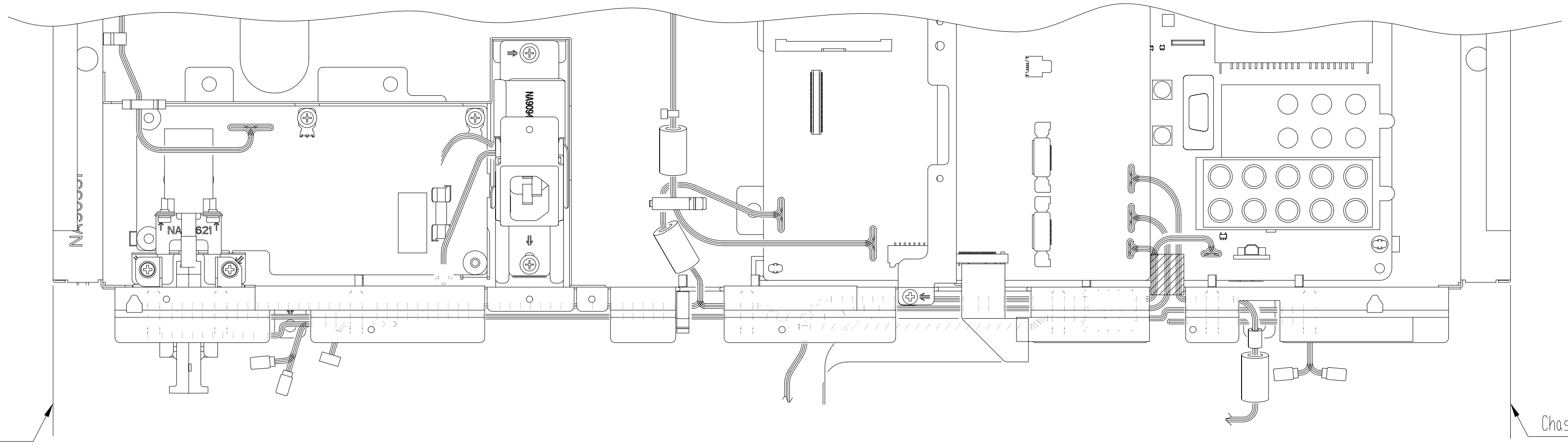
Specification

1. This drawing shows the wiring diagram for 42"PDP Chassis. The connection and wire styling are in the figure.
2. This drawing shows the rear view of the set.
3. Lock lead holders surely.
4. Cores with ( ) round brackets should be deliveried integrated with Harness.

TABLE OF CONTENTS

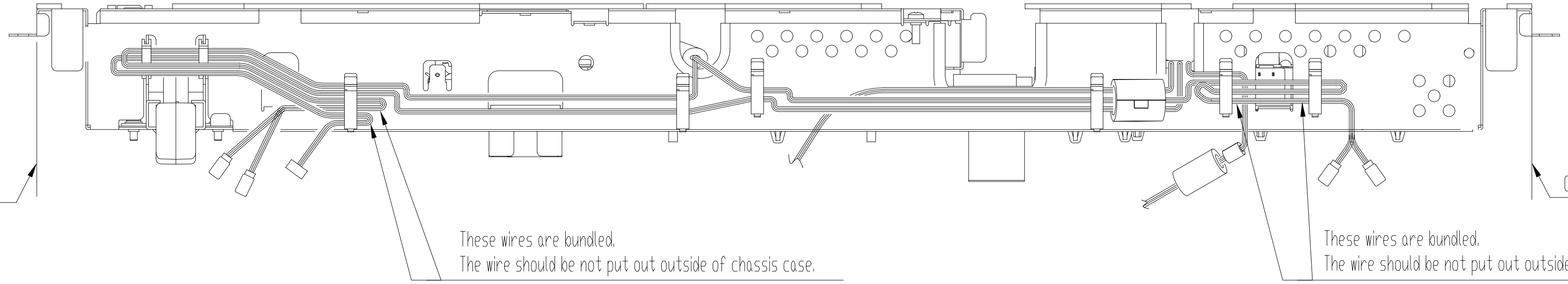
FINAL WIRING DIAGRAM

DW3 (42") WIRING DIAGRAM



Chassis case outside.

Chassis case outside.



Chassis case outside.

Chassis case outside.

These wires are bundled.
The wire should be not put out outside of chassis case.

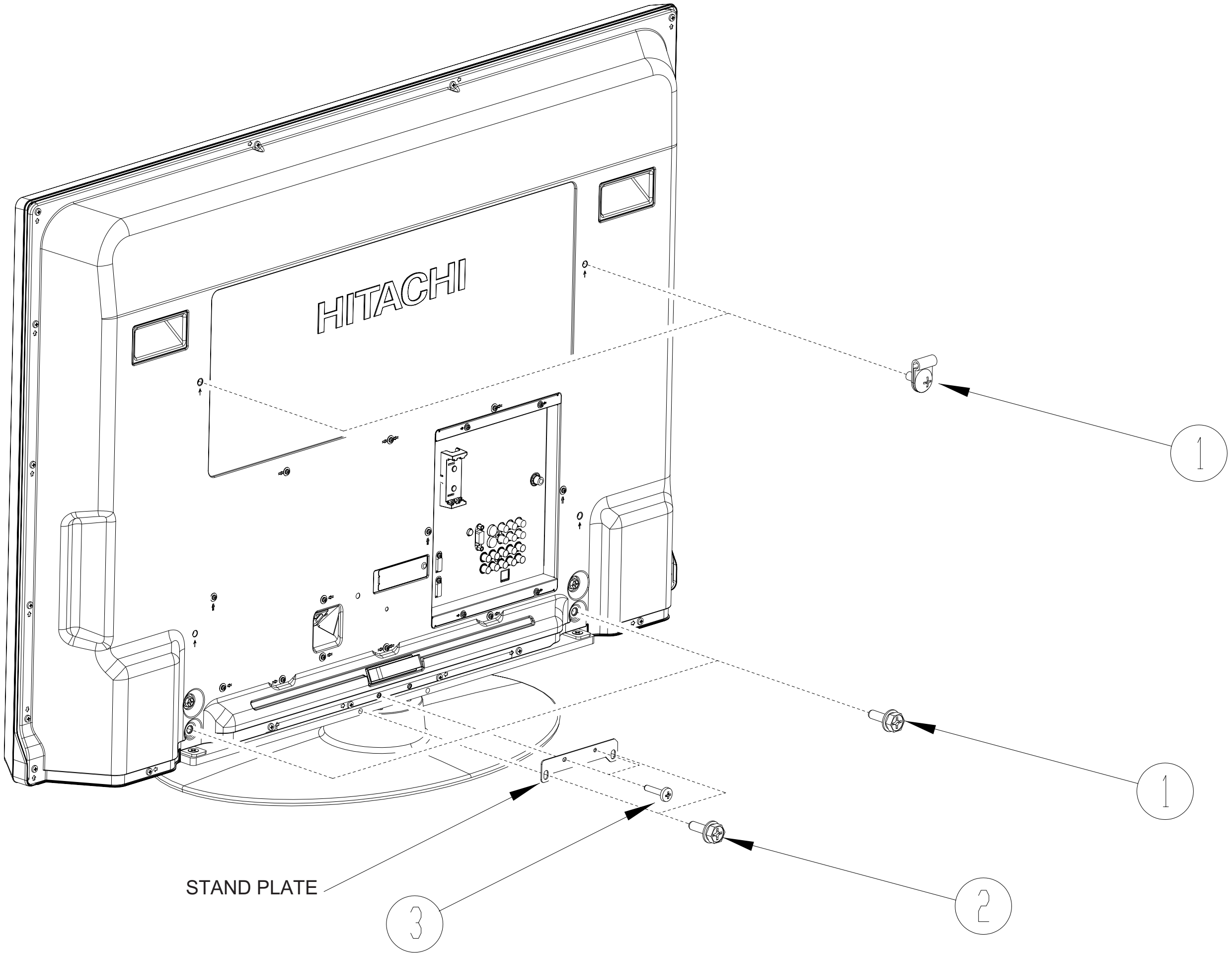
These wires are bundled.
The wire should be not put out outside of chassis case.

(This figure crowds and places it with the frame by the dead work before it builds it in the set for prevention.)

QUICK DISASSEMBLE GUIDE (Back Cover 1)

① Remove Screw M3M 6*18 (4 Pcs.)
Cable Clamp M6 P#ML02112(2 Pcs.)

② Remove Screw M3M 6*12 (2 Pcs.)
③ Remove Screw T2D 4*16 (2 Pcs.)
DW3 Stand Plate

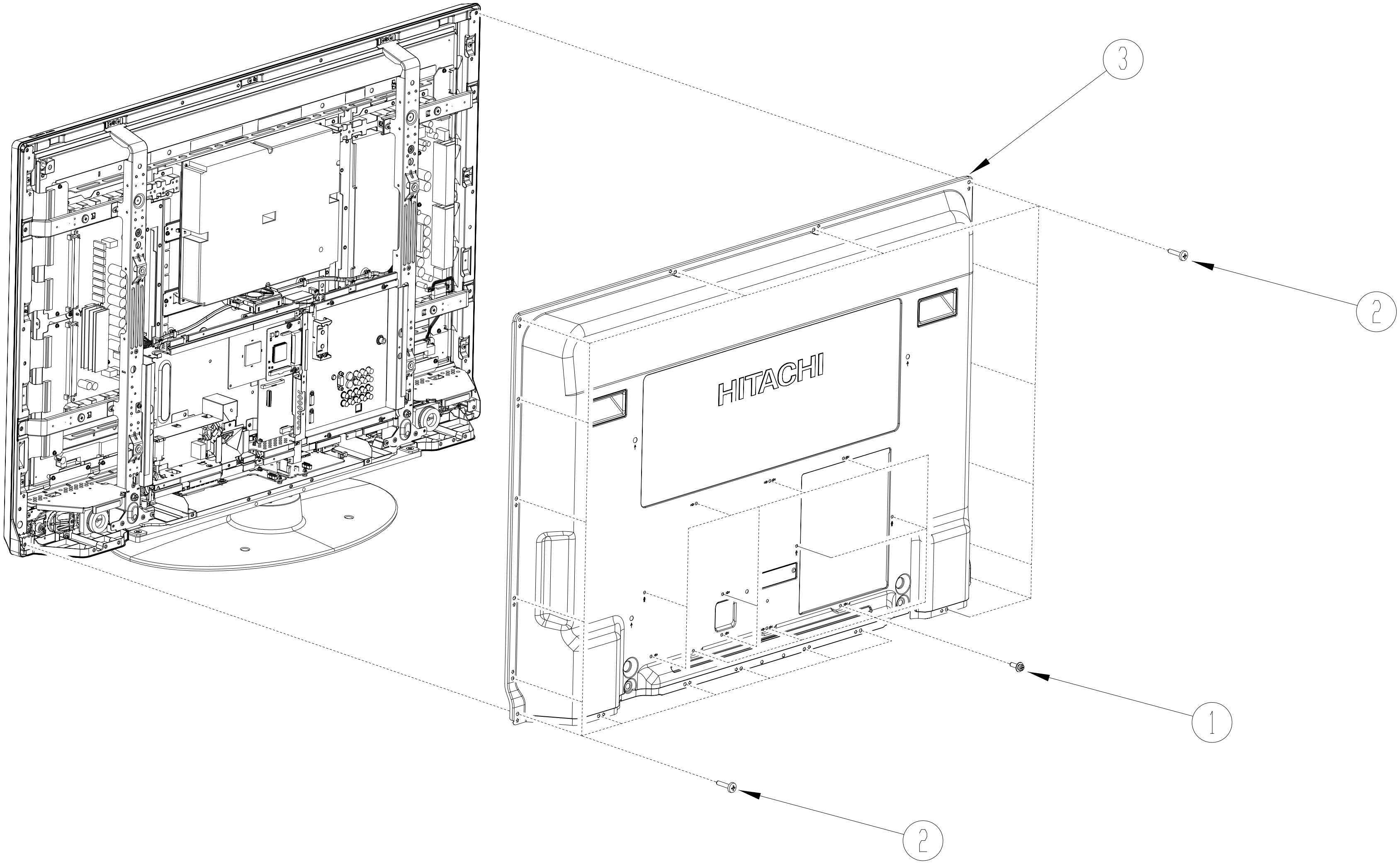

HITACHI
1
1
2
3
STAND PLATE

QUICK DISASSEMBLE GUIDE (Back Cover 2)

① Remove Screw M3S 3*8 (13 Pcs.)

② Remove Screw T2D 4*16 (20 Pcs.)

③ Remove Back Cover P#QA03744



QUICK DISASSEMBLE GUIDE (Power Unit, Fan Ass'y)

① Remove Screw M3E 3*8 (2 Pcs.)
Screw M3S 3*8 (4 Pcs.)

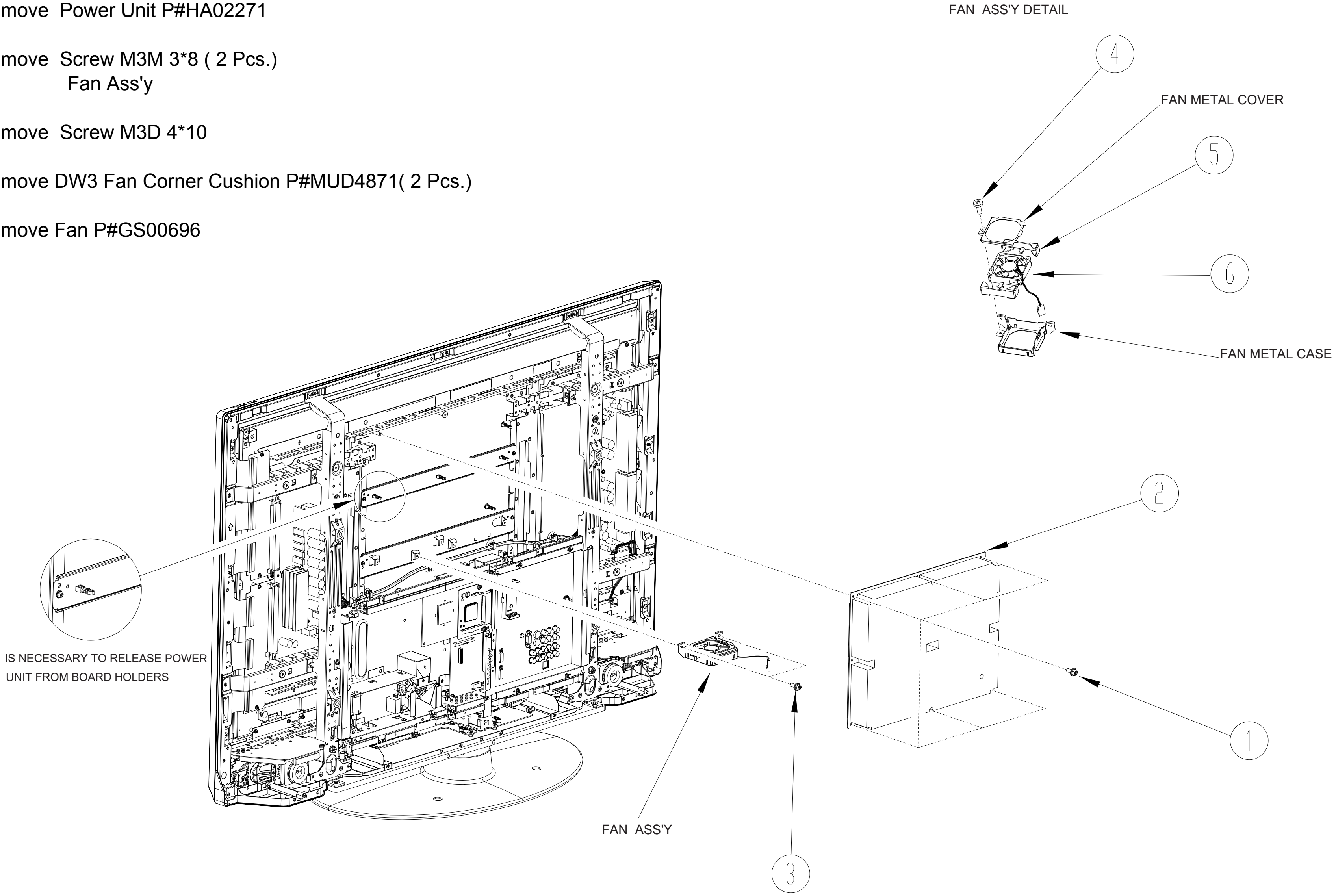
② Remove Power Unit P#HA02271

③ Remove Screw M3M 3*8 (2 Pcs.)
Fan Ass'y

④ Remove Screw M3D 4*10

⑤ Remove DW3 Fan Corner Cushion P#MUD4871(2 Pcs.)

⑥ Remove Fan P#GS00696

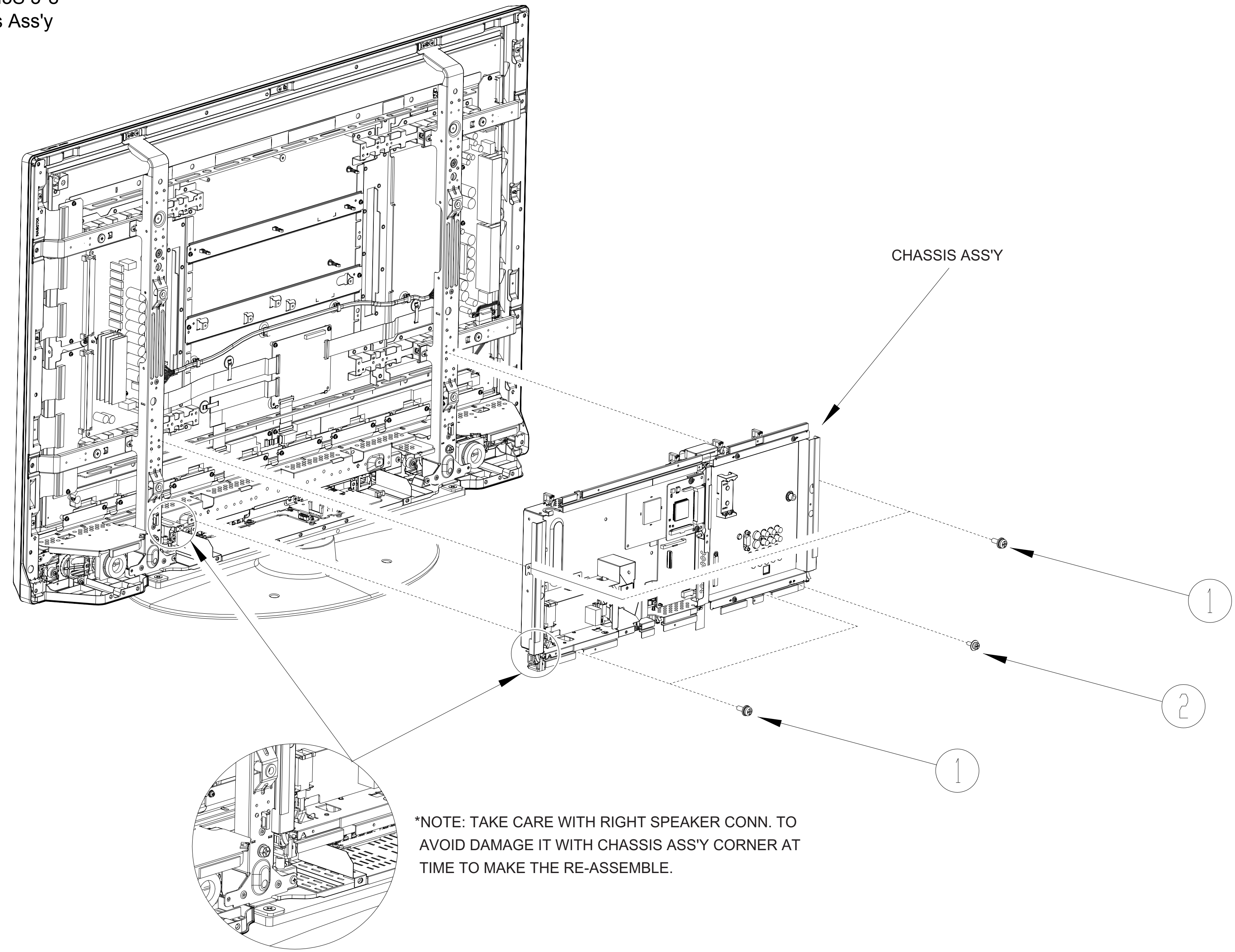

FAN ASS'Y DETAIL
4
FAN METAL COVER
5
6
FAN METAL CASE
2
1
FAN ASS'Y
3

IS NECESSARY TO RELEASE POWER UNIT FROM BOARD HOLDERS

QUICK DISASSEMBLE GUIDE (Chassis Ass'y 1)

① Remove Screw M3C 4*10 (4 Pcs.)

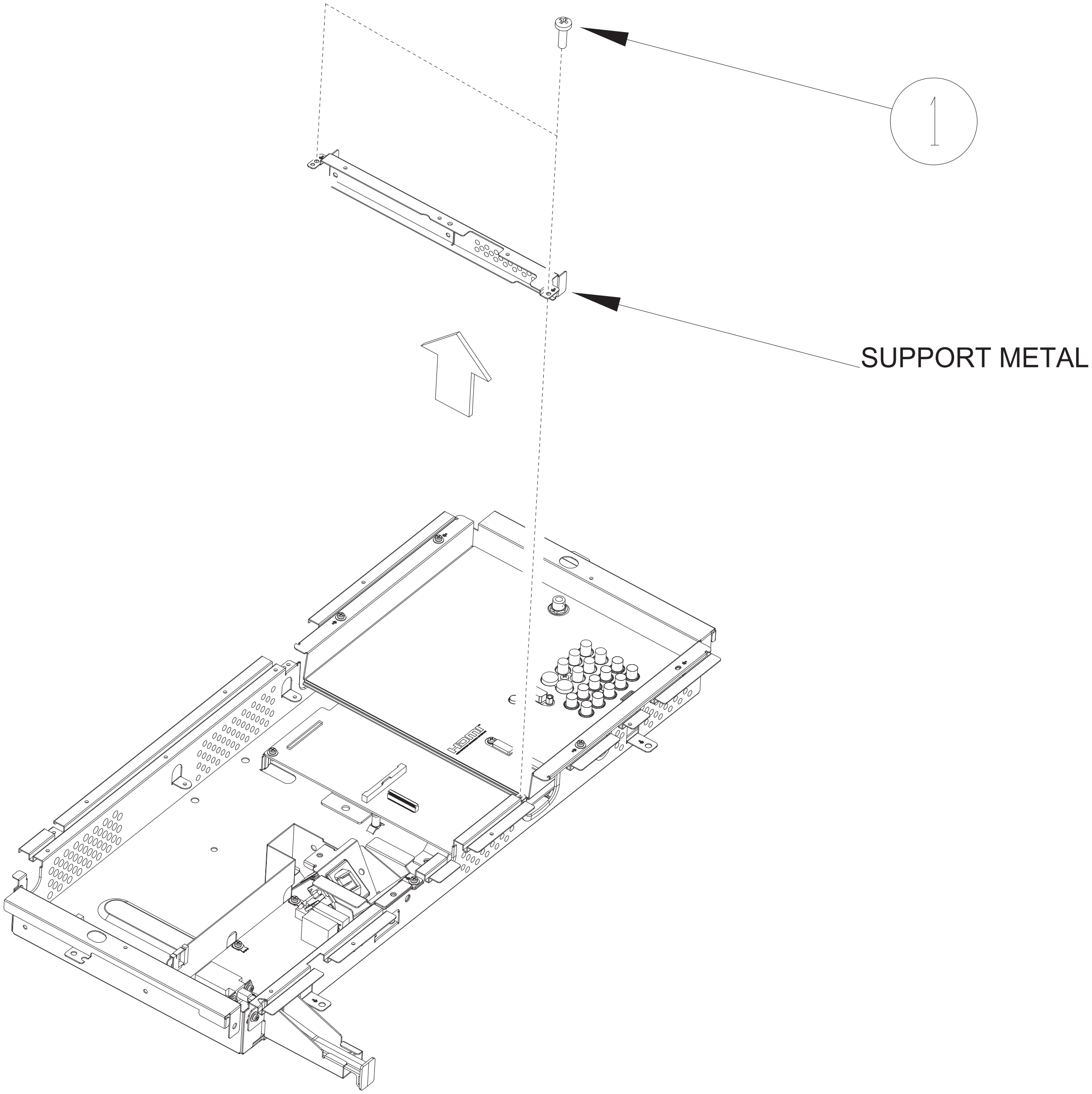
② Remove Screw M3S 3*8
Chassis Ass'y



*NOTE: TAKE CARE WITH RIGHT SPEAKER CONN. TO AVOID DAMAGE IT WITH CHASSIS ASS'Y CORNER AT TIME TO MAKE THE RE-ASSEMBLE.

QUICK DISASSEMBLE GUIDE (Chassis Ass'y 2)

① Remove Screw M3E 3*8 P#MJ03467(2 pcs.)
Support Metal


1
SUPPORT METAL

QUICK DISASSEMBLE GUIDE (Chassis Ass'y 3)

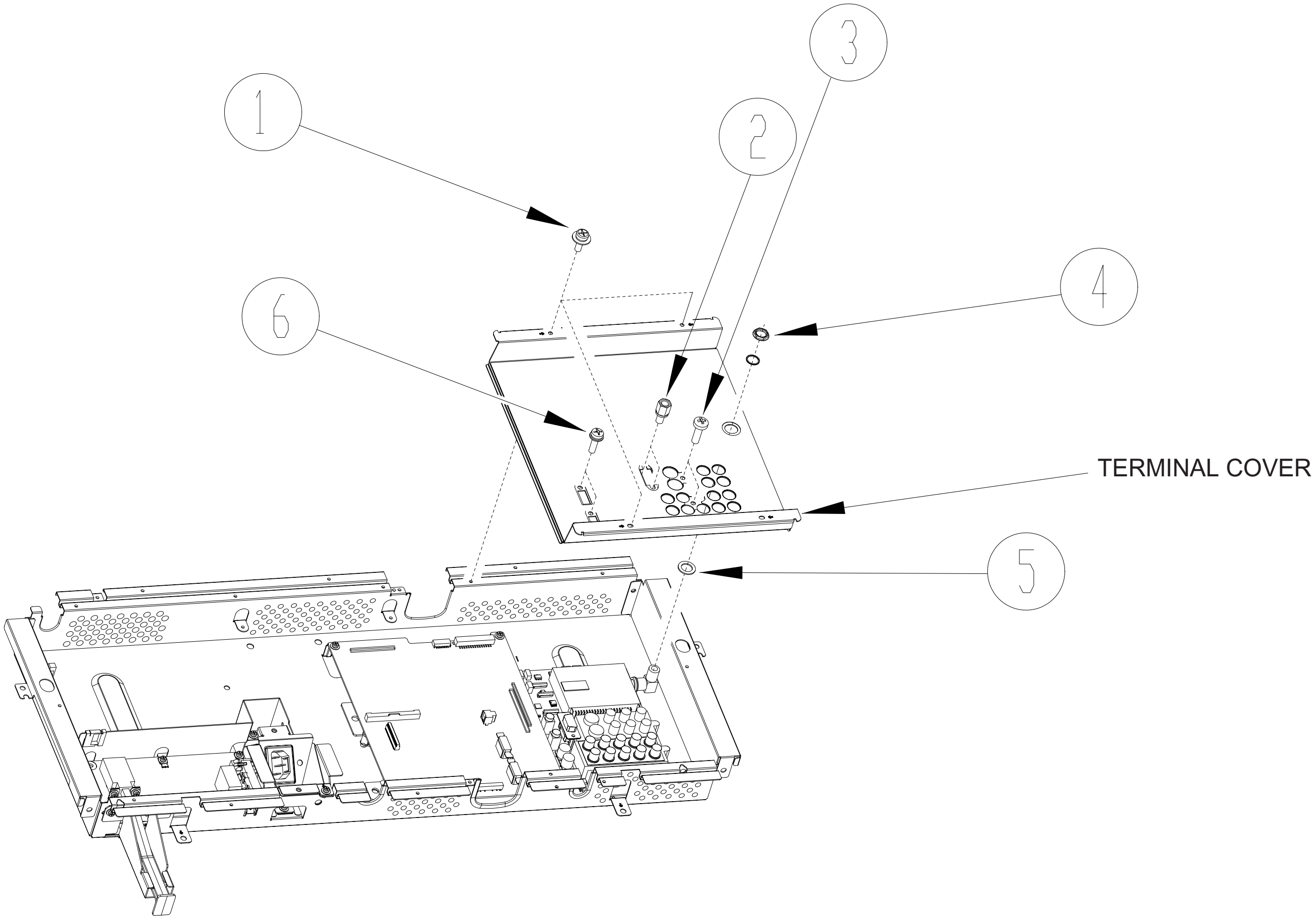
① Remove Screw M3S 3*8 (3 pcs.)

② Remove Screws D-Sub (2 Pcs.)

③ Remove Screws T2B 3*10 (2 Pcs.)

④⑤Remove Tuner Nut & Washers

⑥ Remove Screw M3M 3*6 (2 pcs.)



3
1
2
4
6
TERMINAL COVER
5

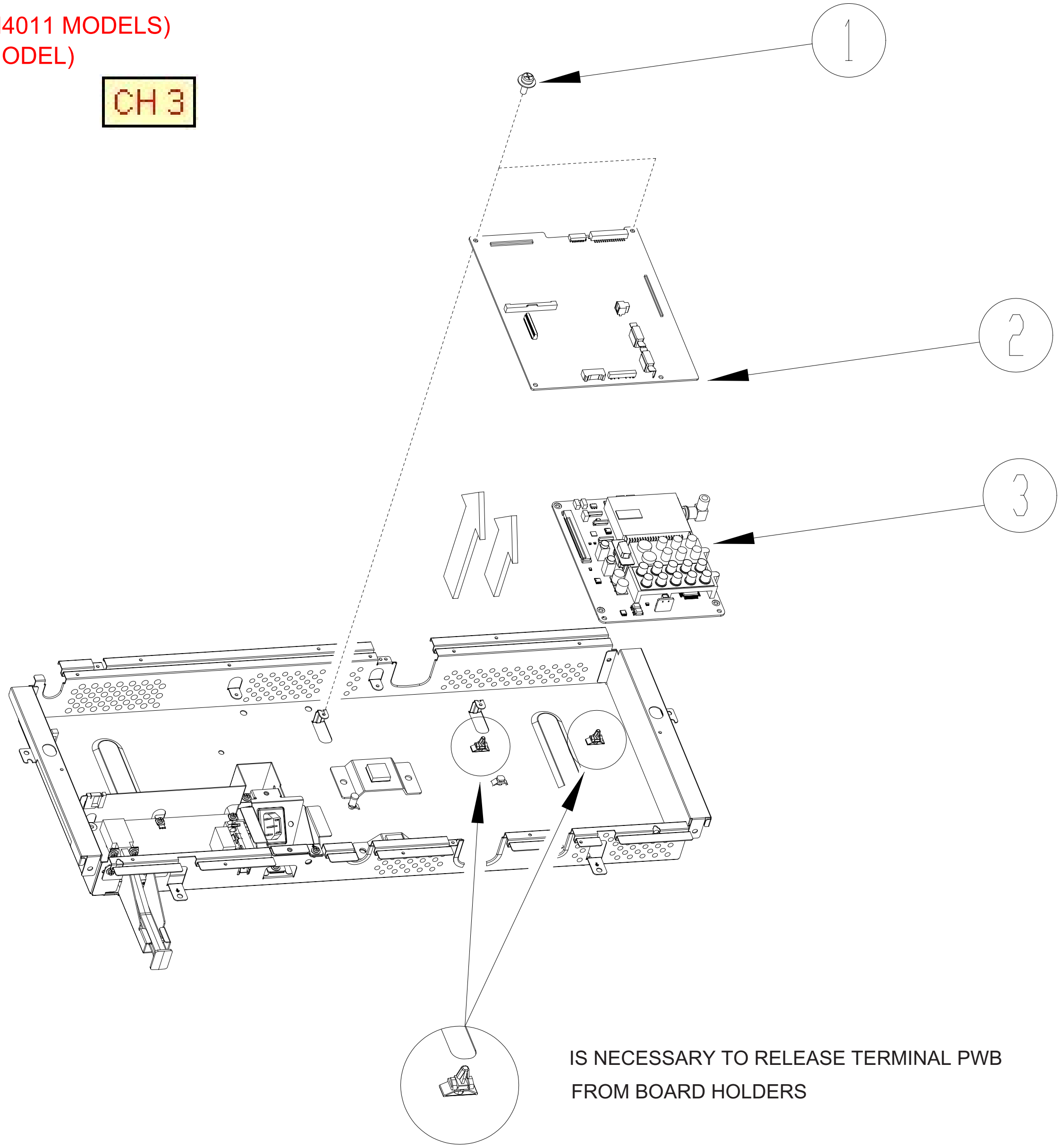
QUICK DISASSEMBLE GUIDE (Chassis Ass'y 4)

① Remove Screw M3E 3*8 (2 pcs.)

② Remove Digital Main Ass'y P# UX28023 (H401/H4011 MODELS)
Digital Main Ass'y P# UX28024 (T501 MODEL)

③ Remove Terminal PWB Ass'y P# JP55123

CH 3



IS NECESSARY TO RELEASE TERMINAL PWB
FROM BOARD HOLDERS

QUICK DISASSEMBLY GUIDE (CONTROL PANEL ASSEMBLY)

` Remove Screw M3C 4*10 (2 Pcs.)
Screw T2D 4*16
Control Ass'y

a Remove Screw M3E 3*8 (3 Pcs.)

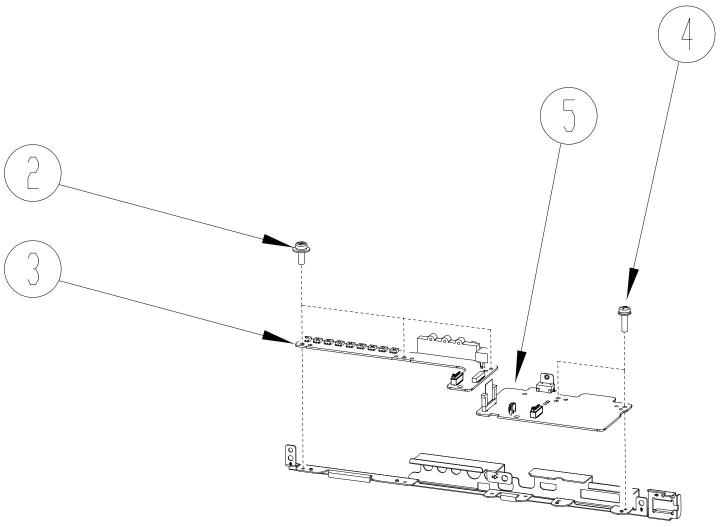
b Remove Control PWB ASS'Y P# JP55123

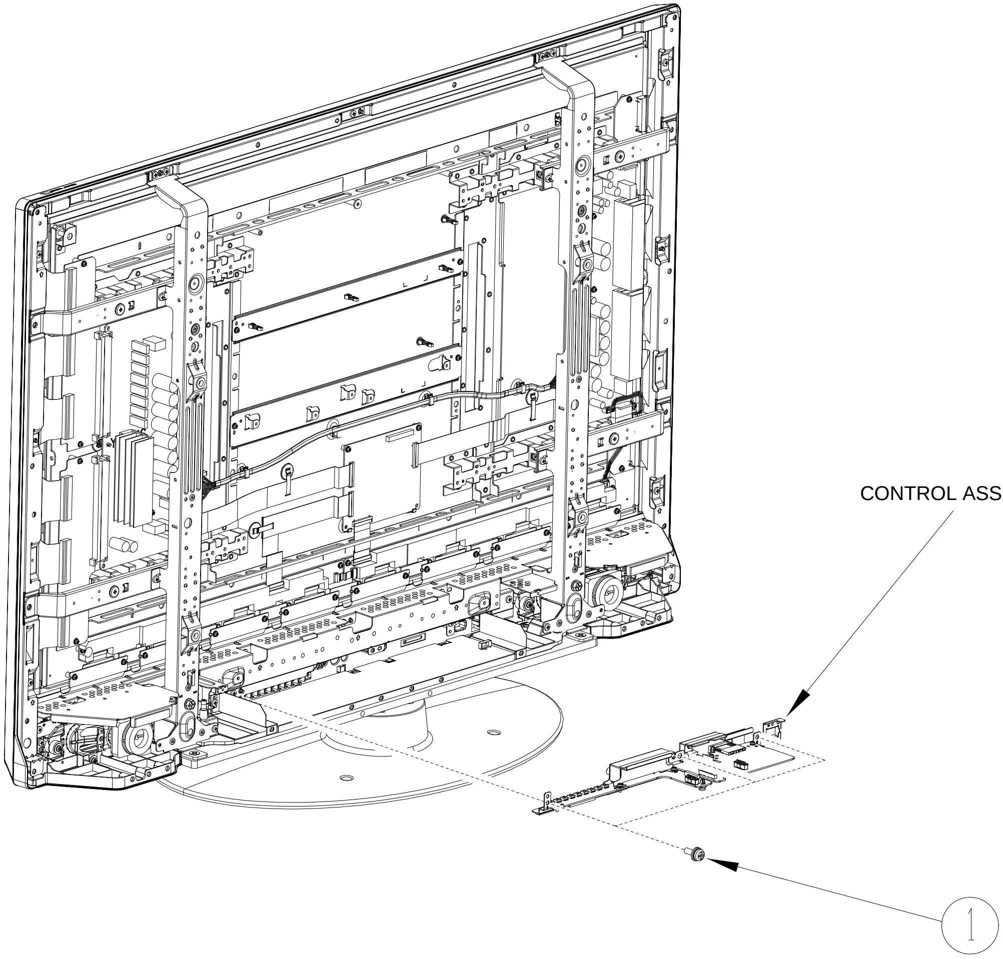
c Remove Screw M3E 3*8 (2 Pcs.)

d Remove SD PWB ASS'Y P# JP55123

Control Door p/n PH41803

CONTROL ASS'Y DETAIL

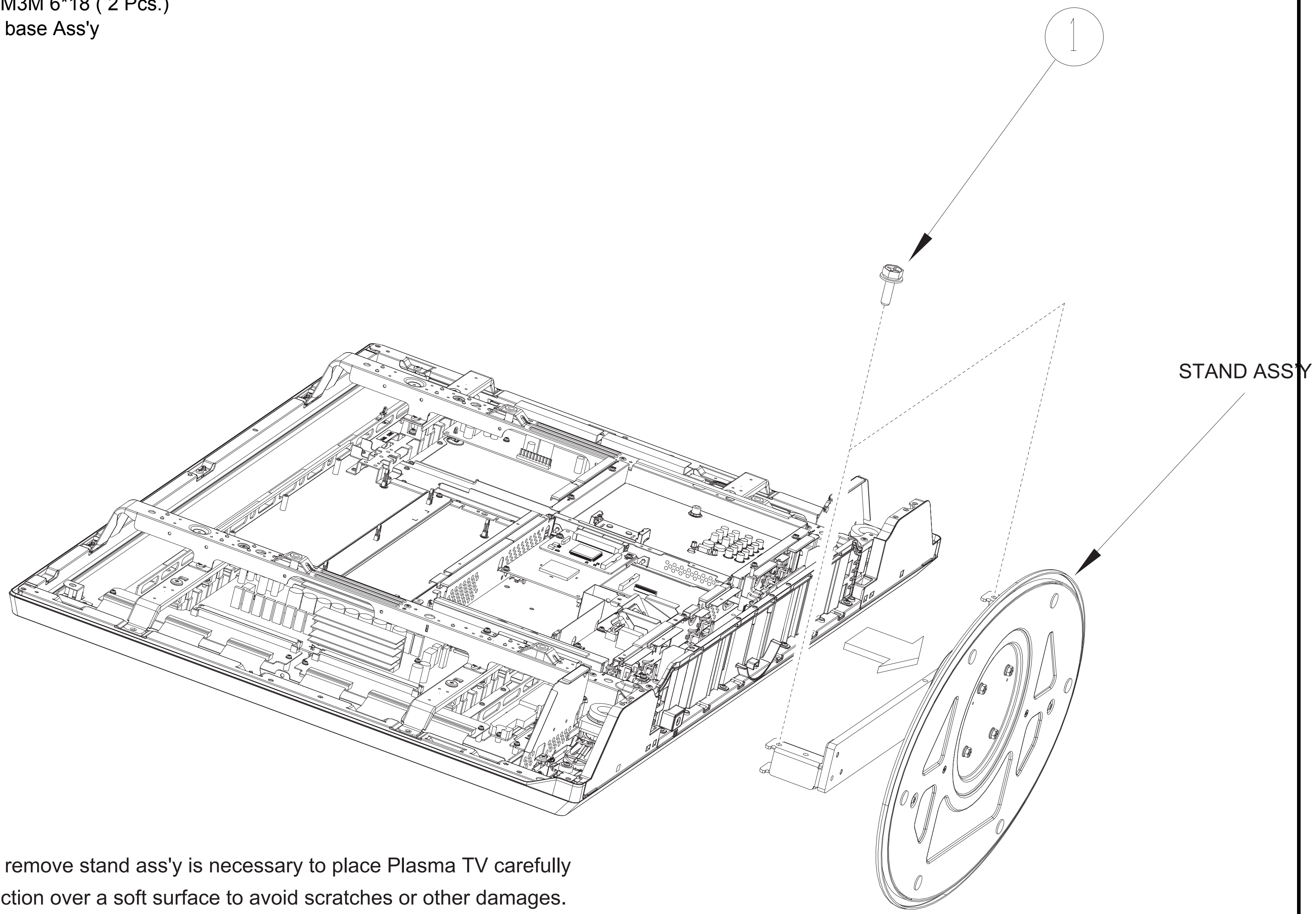




QUICK DISASSEMBLE GUIDE (Plasma Panel Printed Circuit Board Access 1)

* If In a further case Is necessary to remove or exchange Plasma Panel Boards it's better to remove all next parts in order to avoid a damage on such boars or flexible connectors.

① Remove Screw M3M 6*18 (2 Pcs.)
Stand base Ass'y

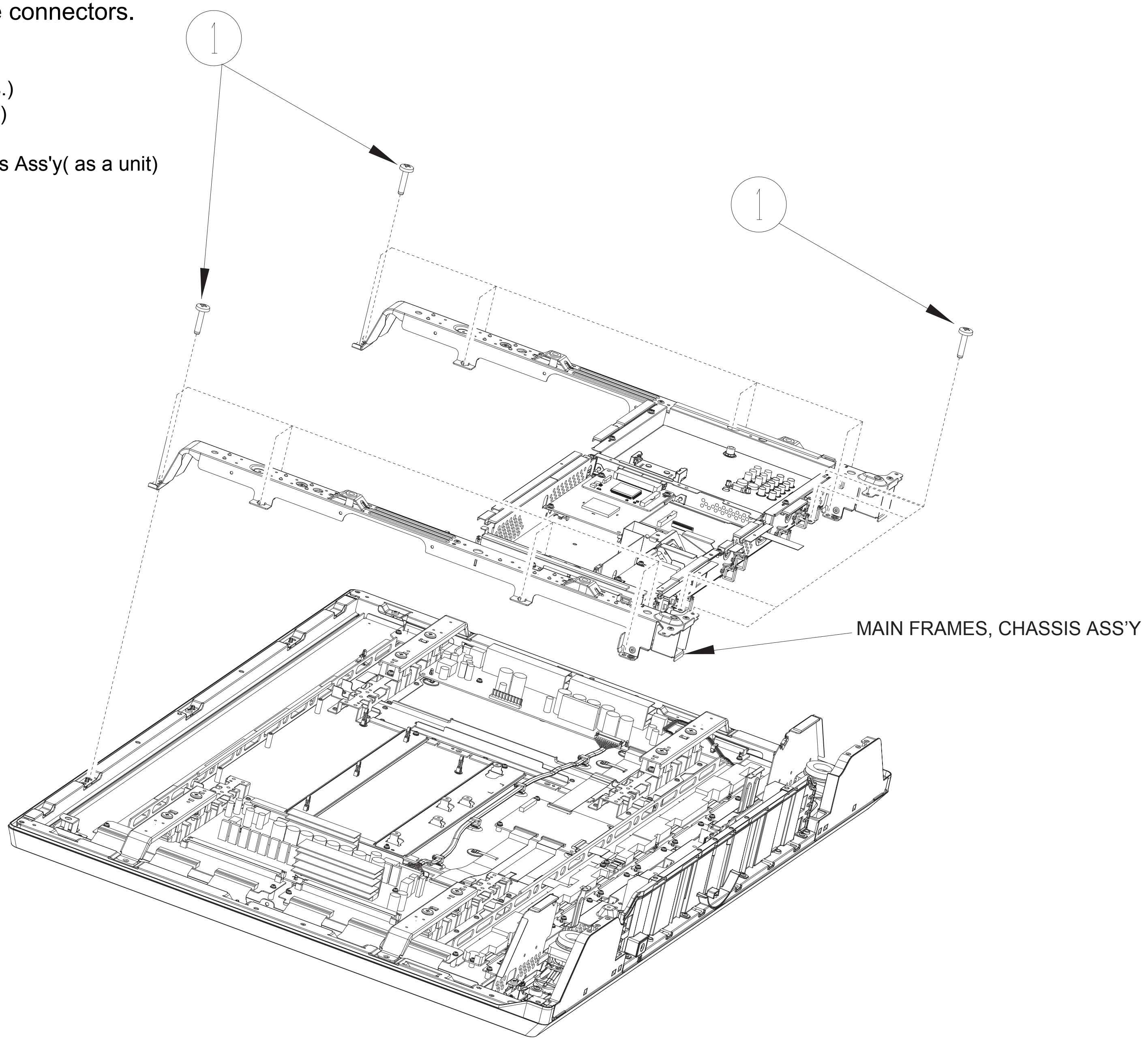


*Note: In order to remove stand ass'y is necessary to place Plasma TV carefully on horizontal direction over a soft surface to avoid scratches or other damages.

QUICK DISASSEMBLE GUIDE (Plasma Panel Printed Circuit Board Access 2)

* If In a further case Is necessary to remove or exchange Plasma Panel Boards it's better to remove all next parts in order to avoid a damage on such boars or flexible connectors.

① Remove Screw M3D 4*10 (8 Pcs.)
Screw T2D 4*16 (10 Pcs.)
Screw M3C 4*10 (2 Pcs.)
Screw M3S 3*8
Main Frames and Chassis Ass'y(as a unit)

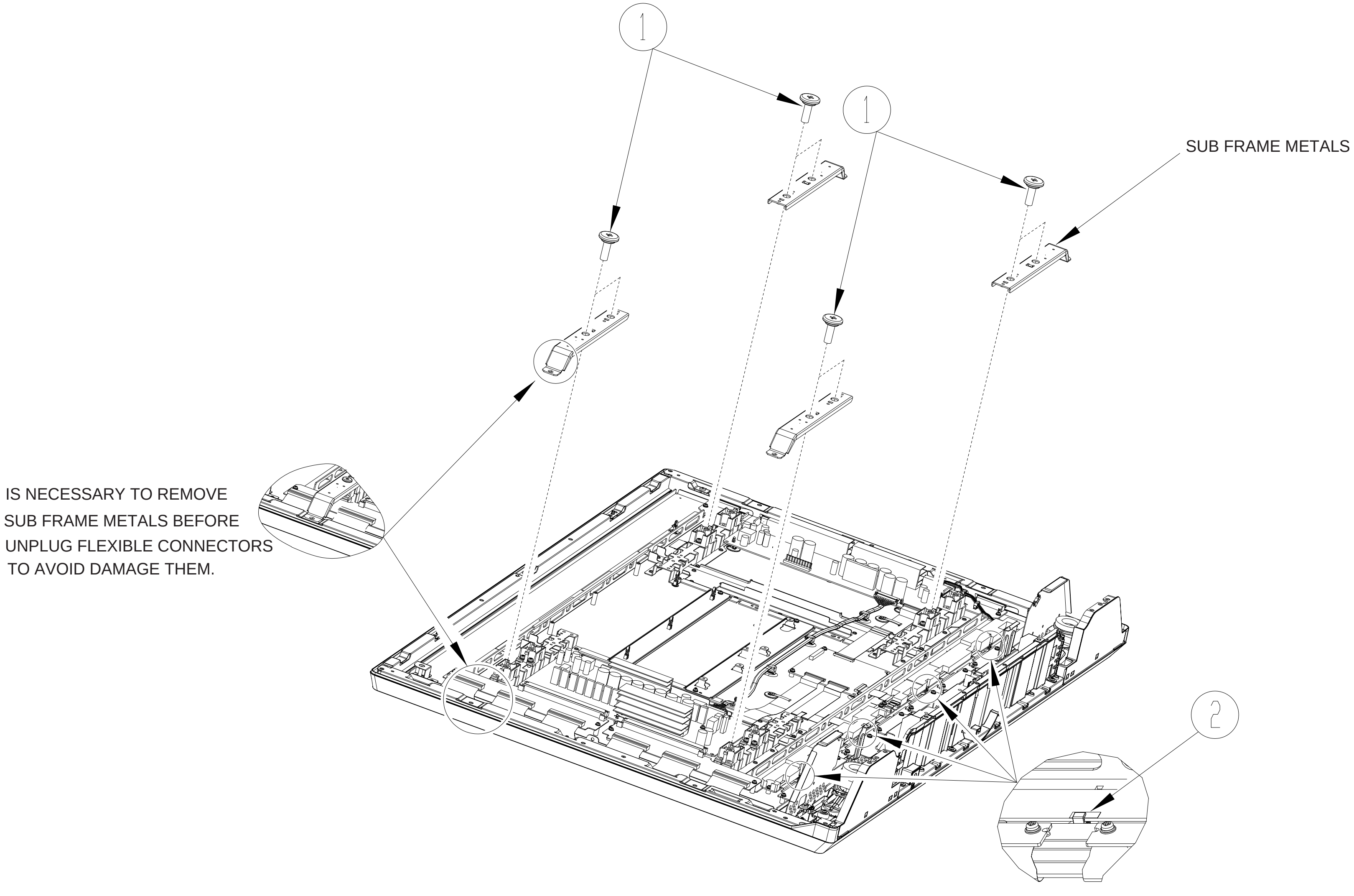


QUICK DISASSEMBLE GUIDE (Plasma Panel Printed Circuit Board Access 3)

* If In a further case Is necessary to remove or exchange Plasma Panel Boards it's better to remove all next parts in order to avoid a damage on such boars or flexible connectors.

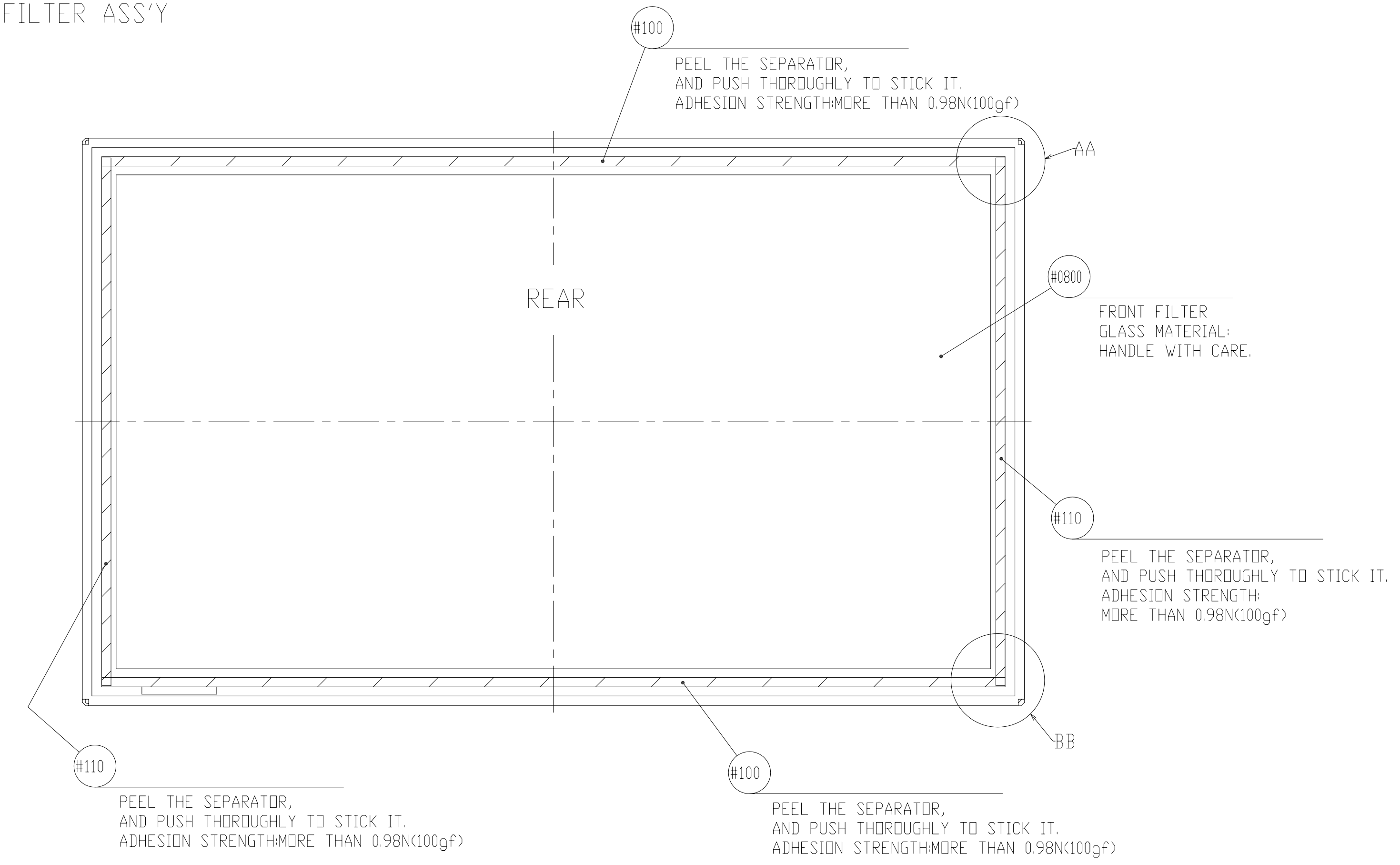
① Remove Screw M3M 5*14 (8 Pcs.)
Sub Frame Metal(4 Pcs.)

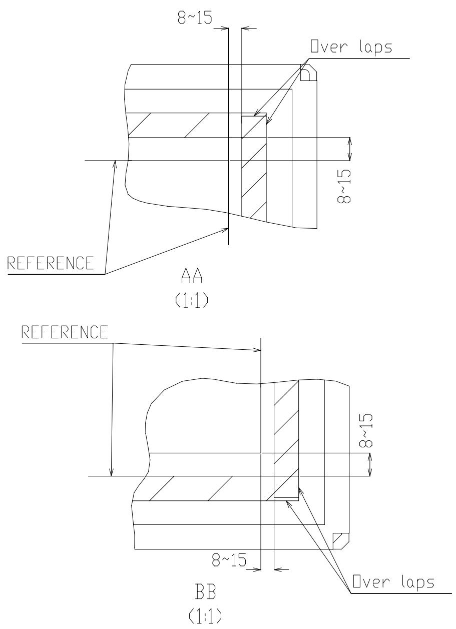
② In case is necessary to exchange A BUS BOARD is necessary to add Spacer P#MN31281 (4 Pcs.)


1
1
SUB FRAME METALS
IS NECESSARY TO REMOVE
SUB FRAME METALS BEFORE
UNPLUG FLEXIBLE CONNECTORS
TO AVOID DAMAGE THEM.
2

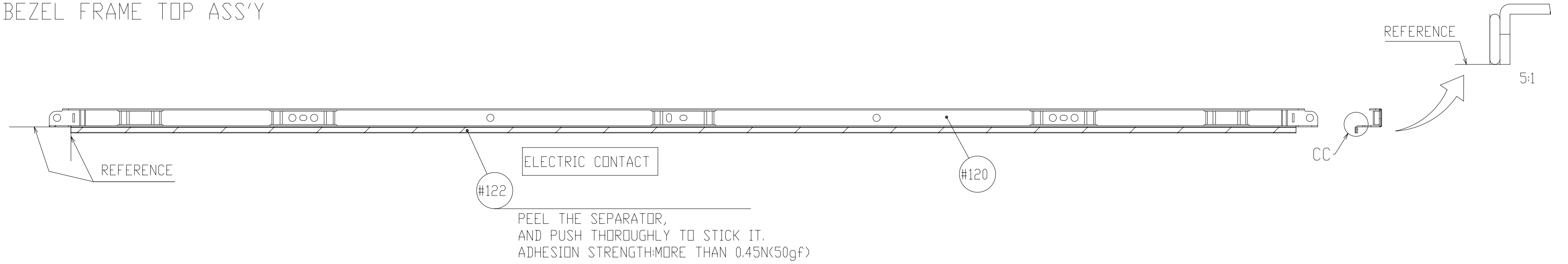
Final Ass'y Parts		
SYM.	P#	DESCRIPTION
#100	MN09131	AIR FILTER 10X9X966
#110	MN09132	AIR FILTER 10X9X564
#120	NA90681	DW3 P42 BEZEL F TOP
#122	MF02423	GASKET 6-3-1015 J1G
#0800	KS22124K	42MI01ET36%A5F.FILTER(H401)
#0800	KS22125K	42MI01ET31%F.FILTER(T501)

FILTER ASS'Y


#100
PEEL THE SEPARATOR,
AND PUSH THOROUGHLY TO STICK IT.
ADHESION STRENGTH:MORE THAN 0.98N(100gf)
AA
REAR
#0800
FRONT FILTER
GLASS MATERIAL;
HANDLE WITH CARE.
#110
PEEL THE SEPARATOR,
AND PUSH THOROUGHLY TO STICK IT.
ADHESION STRENGTH:
MORE THAN 0.98N(100gf)
BB
#110
PEEL THE SEPARATOR,
AND PUSH THOROUGHLY TO STICK IT.
ADHESION STRENGTH:MORE THAN 0.98N(100gf)
#100
PEEL THE SEPARATOR,
AND PUSH THOROUGHLY TO STICK IT.
ADHESION STRENGTH:MORE THAN 0.98N(100gf)

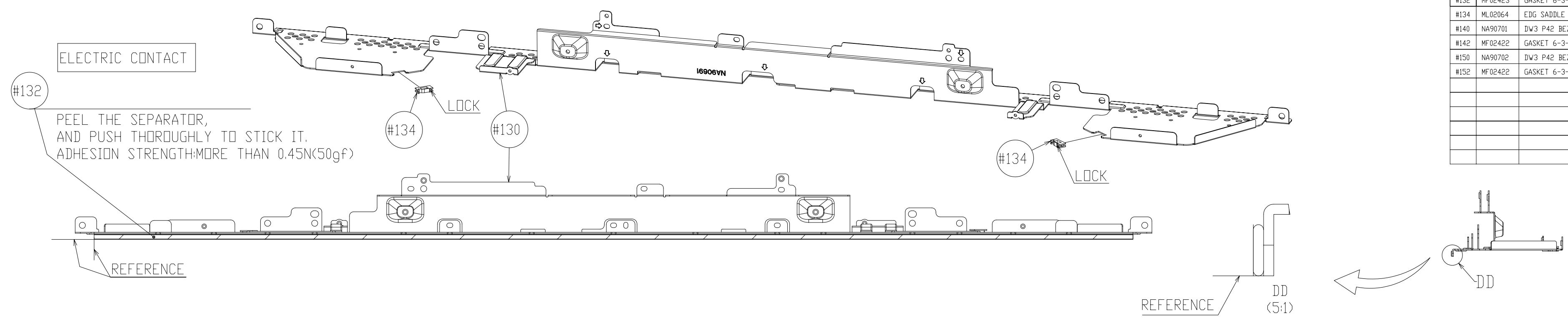

8~15
Over laps
8~15
REFERENCE
AA
(1:1)
REFERENCE
8~15
8~15
Over laps
BB
(1:1)

BEZEL FRAME TOP ASS'Y


REFERENCE
5:1
CC
REFERENCE
ELECTRIC CONTACT
#120
#122
PEEL THE SEPARATOR,
AND PUSH THOROUGHLY TO STICK IT.
ADHESION STRENGTH:MORE THAN 0.45N(50gf)

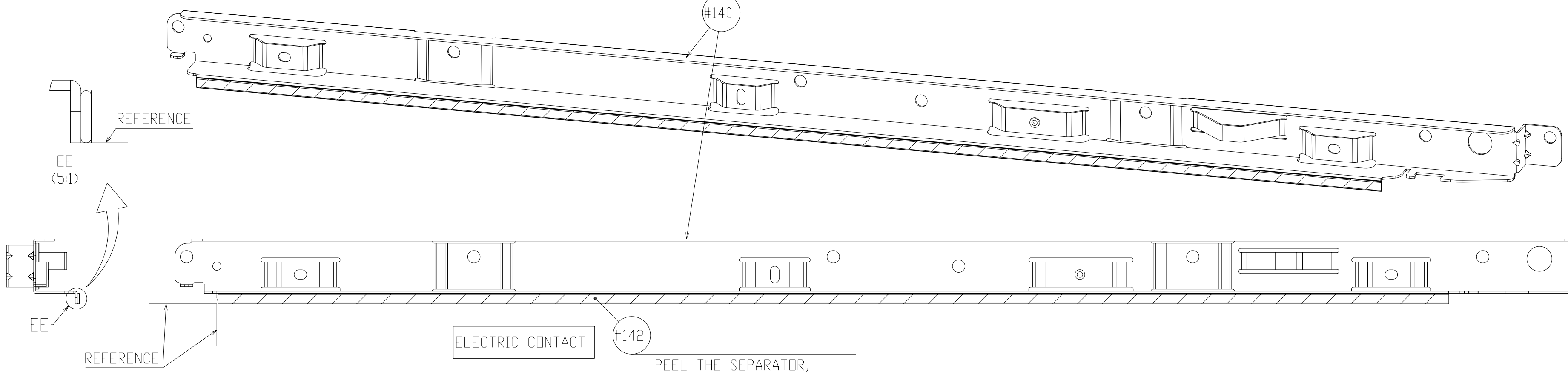
BEZEL FRAME BOTTOM ASS'Y

Final Ass'y Parts		
SYM.	P#	DESCRIPTION
#130	NA90691	DW3 P42 BEZEL F BTM
#132	MF02423	GASKET 6-3-1015 J1G
#134	ML02064	EDG SADDLE 0704L
#140	NA90701	DW3 P42 BEZEL F R
#142	MF02422	GASKET 6-3-589 J1G
#150	NA90702	DW3 P42 BEZEL F L
#152	MF02422	GASKET 6-3-589 J1G


ELECTRIC CONTACT
#132
LOCK
#134
#130
#134
LOCK
REFERENCE
REFERENCE
DD
(5:1)
DD

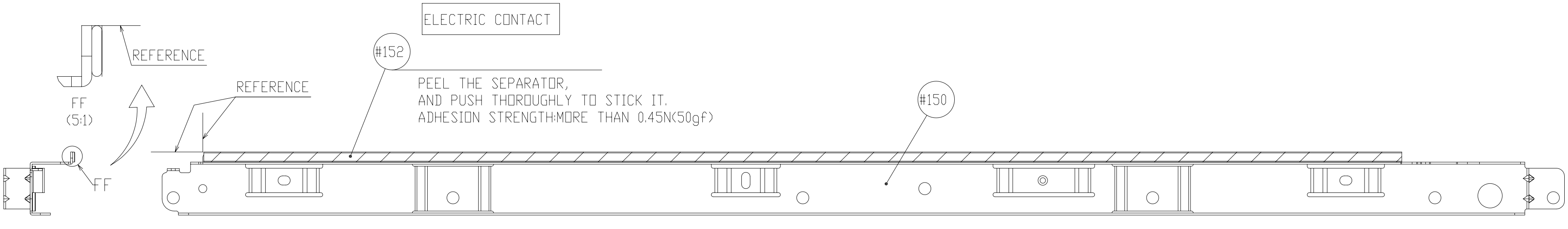
PEEL THE SEPARATOR,
AND PUSH THOROUGHLY TO STICK IT.
ADHESION STRENGTH:MORE THAN 0.45N(50gf)

BEZEL FRAME R ASS'Y


#140
REFERENCE
EE
(5:1)
EE
REFERENCE
ELECTRIC CONTACT
#142

PEEL THE SEPARATOR,
AND PUSH THOROUGHLY TO STICK IT.
ADHESION STRENGTH:MORE THAN 0.45N(50gf)

?T?DBEZEL FRAME L ASS'Y

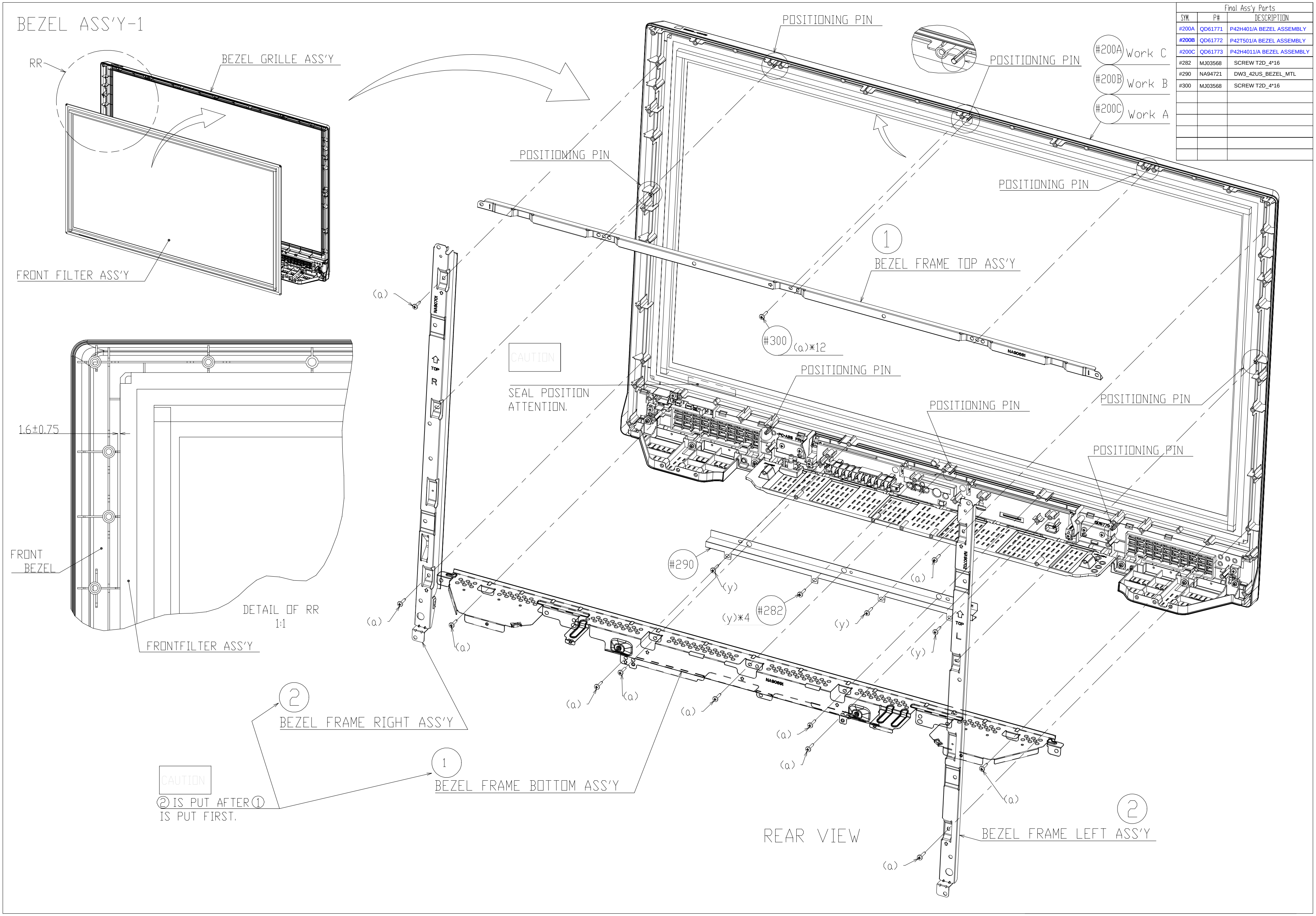

ELECTRIC CONTACT
#152
REFERENCE
REFERENCE
FF
(5:1)
FF
#150

PEEL THE SEPARATOR,
AND PUSH THOROUGHLY TO STICK IT.
ADHESION STRENGTH:MORE THAN 0.45N(50gf)

FINAL ASSEMBLY GUIDE

CH10

SYM.	P#	DESCRIPTION
#200A	QD61771	P42H401 / P42H401A BEZEL ASSEMBLY
#200B	QD61772	P42T501 / P42T501A BEZEL ASSEMBLY
#200C	QD61773	P42H4011 / P42H4011A BEZEL ASSEMBLY


BEZEL ASS'Y-1
RR
BEZEL GRILLE ASS'Y
FRONT FILTER ASS'Y
1.6±0.75
FRONT BEZEL
DETAIL OF RR 1:1
FRONTFILTER ASS'Y
POSITIONING PIN
POSITIONING PIN
POSITIONING PIN
POSITIONING PIN
POSITIONING PIN
POSITIONING PIN
POSITIONING PIN
POSITIONING PIN
#200A Work C
#200B Work B
#200C Work A
(a)
CAUTION
SEAL POSITION ATTENTION.
① BEZEL FRAME TOP ASS'Y
#300 (a)*12
#290
(y)
(y)*4
#282
(y)
(y)
(a)
(a)
(a)
(a)
(a)
(a)
(a)
(a)
(a)
(a)
(a)
② BEZEL FRAME RIGHT ASS'Y
① BEZEL FRAME BOTTOM ASS'Y
CAUTION
② IS PUT AFTER ① IS PUT FIRST.
REAR VIEW
② BEZEL FRAME LEFT ASS'Y
NA90661
R
L
TOP

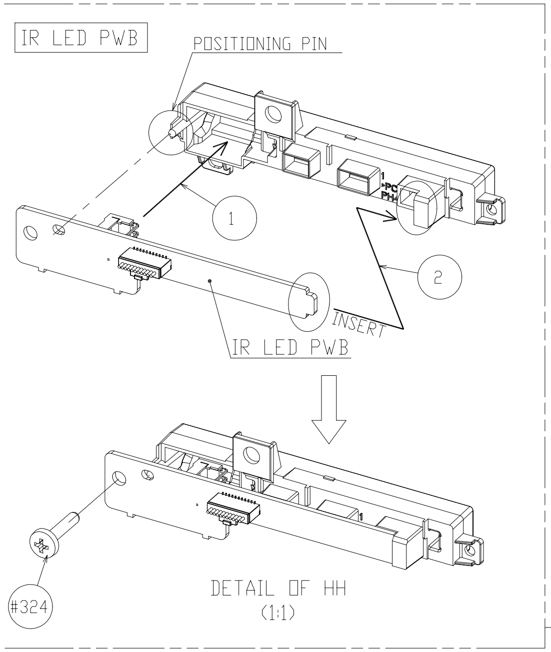
Final Ass'y Parts		
SYM.	P#	DESCRIPTION
#200A	QD61771	P42H401/A BEZEL ASSEMBLY
#200B	QD61772	P42T501/A BEZEL ASSEMBLY
#200C	QD61773	P42H4011/A BEZEL ASSEMBLY
#282	MJ03568	SCREW T2D_4*16
#290	NA94721	DW3_42US_BEZEL_MTL
#300	MJ03568	SCREW T2D_4*16

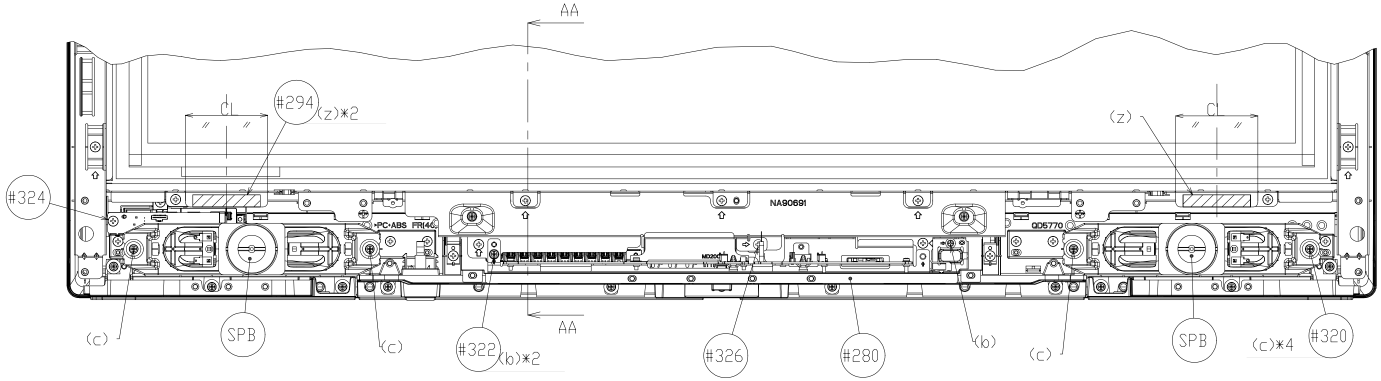
FINAL ASSEMBLY GUIDE

PH43281 SPEAKER GRILL L (All P42 Inch)
PH43282 SPEAKER GRILL R (All P42 Inch)

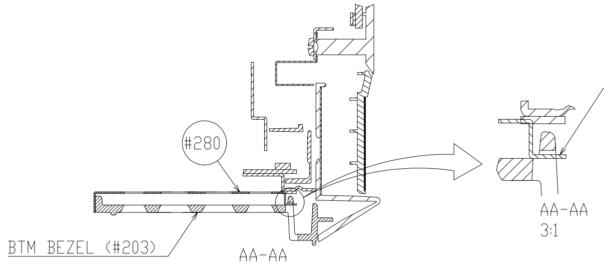
CH11

BEZEL ASS'Y-2


IR LED PWB
POSITIONING PIN
1
2
INSERT
IR LED PWB
#324
DETAIL OF HH
(1:1)


AA
CL
#294
(z)*2
(z)
CL
#324
NA90691
QD5770
(c)
SPB
(c)
#322
(b)*2
AA
#326
#280
(b)
(c)
SPB
(c)*4
#320

Final Ass'y Parts		
SYM.	P#	DESCRIPTION
#280	MD20301	DW3 42US BTM SHIELD
#281	ML02731	WIRE CLAMP
#294	MF02413	GASKET 10-2-55 J1G
#320	MJ04013	SCRW T2B_4*16
#322	MJ03568	SCRW T2B_4*16
#324	MJ03568	SCRW T2B_4*16
#326	MJ03568	SCRW T2B_4*16
SPB	GK01651	SPEAKER-04X15D
IR LED	JP55121	IR LED PWB ASS'Y

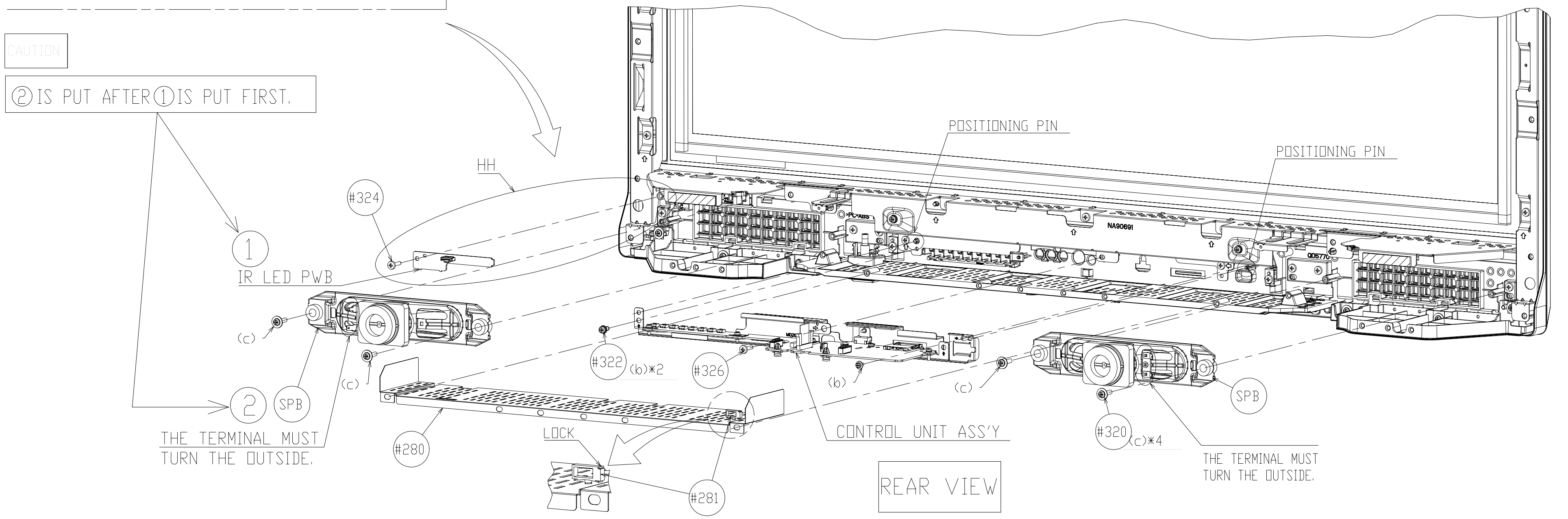

#280
BTM BEZEL (#203)
AA-AA
AA-AA
3:1

CAUTION

Insert (#280) in the hole of
BTM BEZEL(#203) surely.
2 places

CAUTION

② IS PUT AFTER ① IS PUT FIRST.


HH
#324
①
IR LED PWB
(c)
SPB
②
SPB
(c)
#280
LOCK
#281
#322
(b)*2
#326
(b)
POSITIONING PIN
POSITIONING PIN
NA90691
QD5770
CONTROL UNIT ASS'Y
(c)
#320
(c)*4
SPB
REAR VIEW

THE TERMINAL MUST
TURN THE OUTSIDE.

THE TERMINAL MUST
TURN THE OUTSIDE.

FINAL ASSEMBLY GUIDE

POW UNIT ASS'Y-1

CAUTION

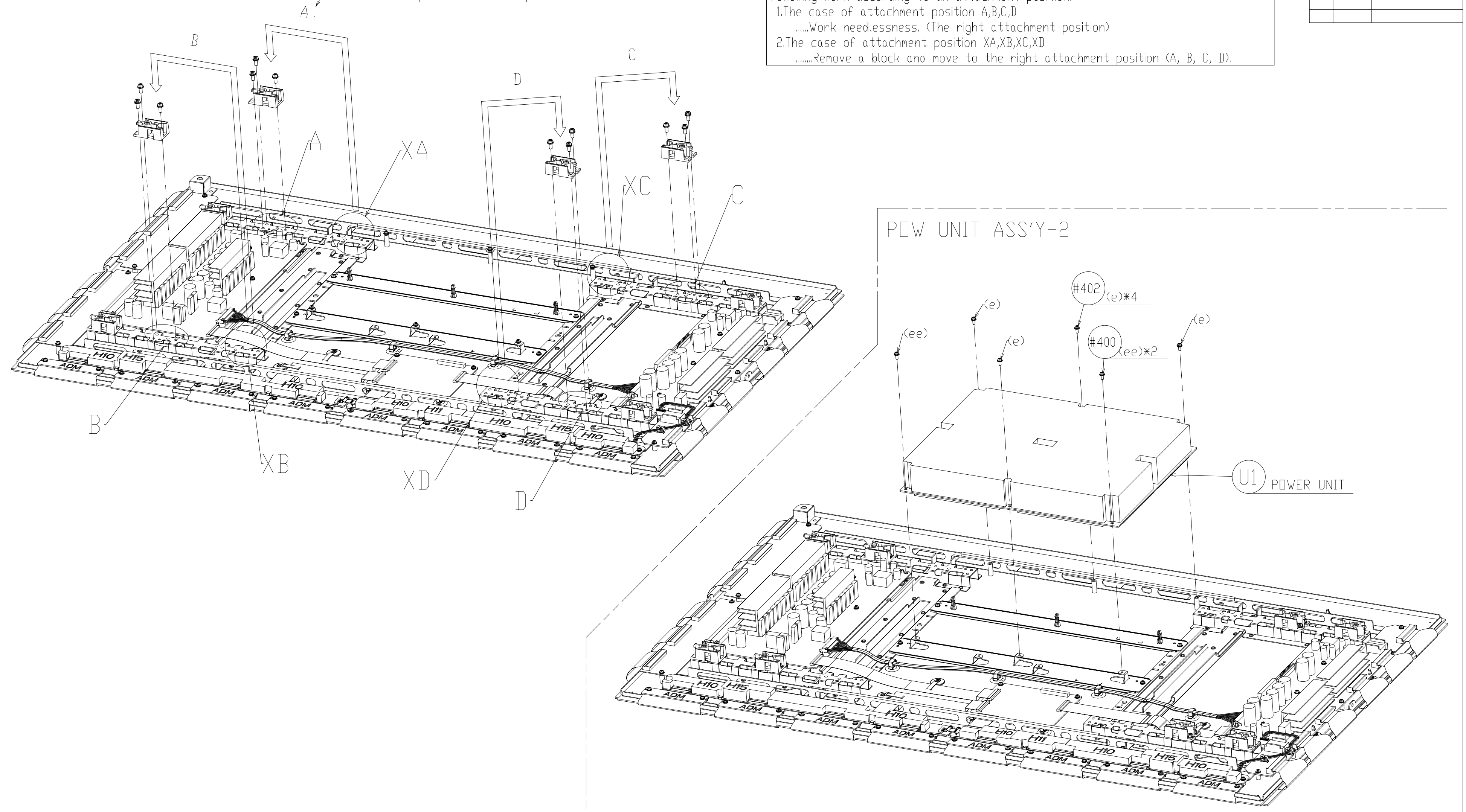
When the block is detached, the
suck processing is done so that
the cutting rubbish should not remain.
(Both of 4 places)

It moves detaching the block obtained
for the panel. (Both of 4 places)

CAUTION

Check the position of the block attached to the panel and do the
following work according to an attachment position.
1.The case of attachment position A,B,C,D
......Work needlessness. (The right attachment position)
2.The case of attachment position XA,XB,XC,XD
........Remove a block and move to the right attachment position (A, B, C, D).

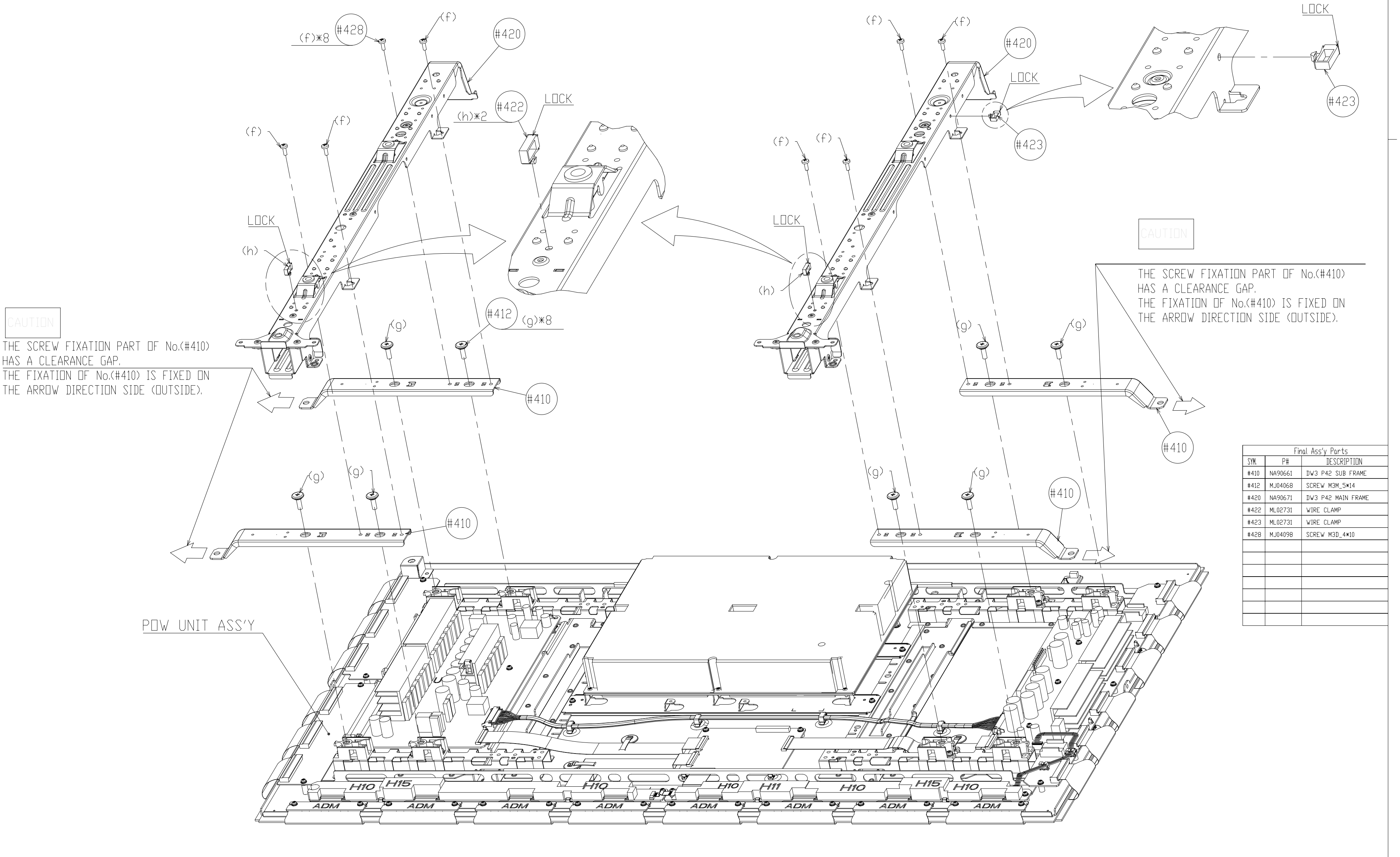
Final Ass'y Parts		
SYM.	P#	DESCRIPTION
#400	MJ03467	SCRW M3E_3*8
#402	MJ04092	SCRW M3S 3X8
#U1	HA02271	POW-PS-80



A.
B
C
D
A
XA
XC
C
B
XB
XD
D
H10
H15
H11
ADM
POW UNIT ASS'Y-2
#402
(e)*4
(e)
(ee)
(e)
#400
(ee)*2
(e)
U1
POWER UNIT

CHASSIS ASS'Y-1

REAR VIEW IS (07/).


(f)*8
#428
(f)
#420
(h)*2
#422
LOCK
(f)
(f)
LOCK
(h)
#412
(g)*8
(g)
#410
(g)
(g)
#410
POW UNIT ASS'Y
(f)
(f)
#420
LOCK
#423
LOCK
#423
(f)
(f)
LOCK
(h)
(g)
(g)
#410
(g)
(g)
#410
H10
H15
H10
H10
H11
H10
H15
H10
ADM
ADM
ADM
ADM
ADM
ADM
ADM
ADM

CAUTION

THE SCREW FIXATION PART OF No.(#410) HAS A CLEARANCE GAP.
THE FIXATION OF No.(#410) IS FIXED ON THE ARROW DIRECTION SIDE (OUTSIDE).

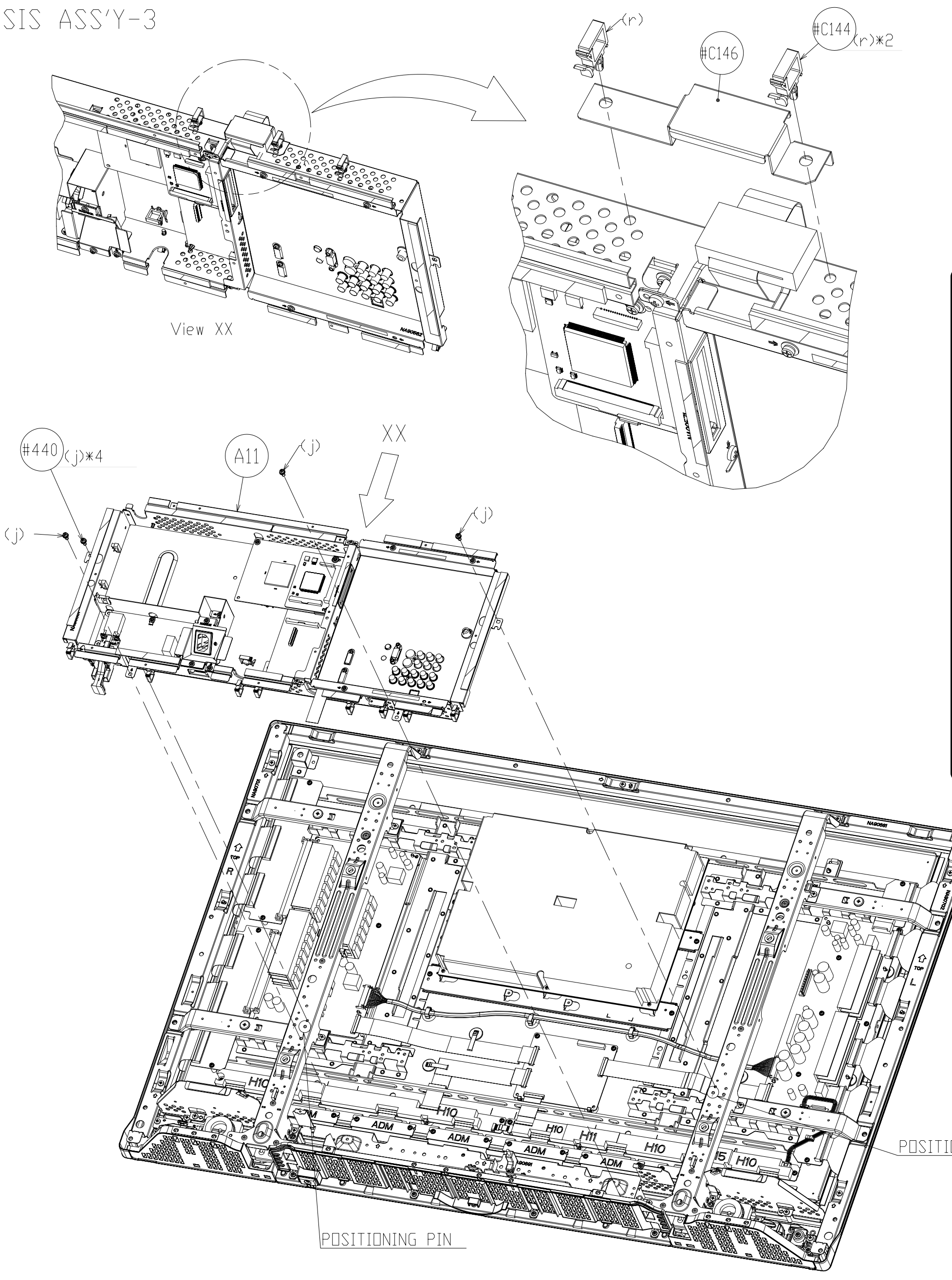
CAUTION

THE SCREW FIXATION PART OF No.(#410) HAS A CLEARANCE GAP.
THE FIXATION OF No.(#410) IS FIXED ON THE ARROW DIRECTION SIDE (OUTSIDE).

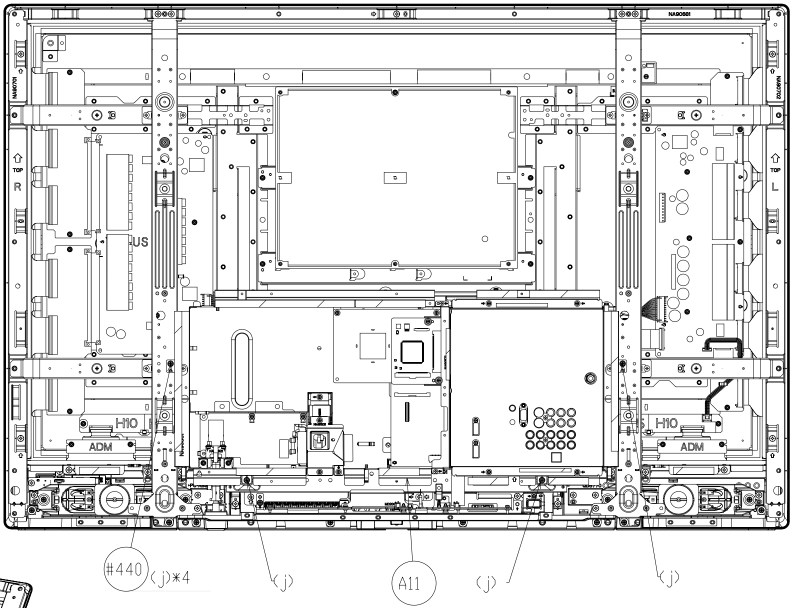
Final Ass'y Parts

SYM.	P#	DESCRIPTION
#410	NA90661	DW3 P42 SUB FRAME
#412	MJ04068	SCREW M3M_5*14
#420	NA90671	DW3 P42 MAIN FRAME
#422	ML02731	WIRE CLAMP
#423	ML02731	WIRE CLAMP
#428	MJ04098	SCREW M3D_4*10

CHASSIS ASS'Y-3

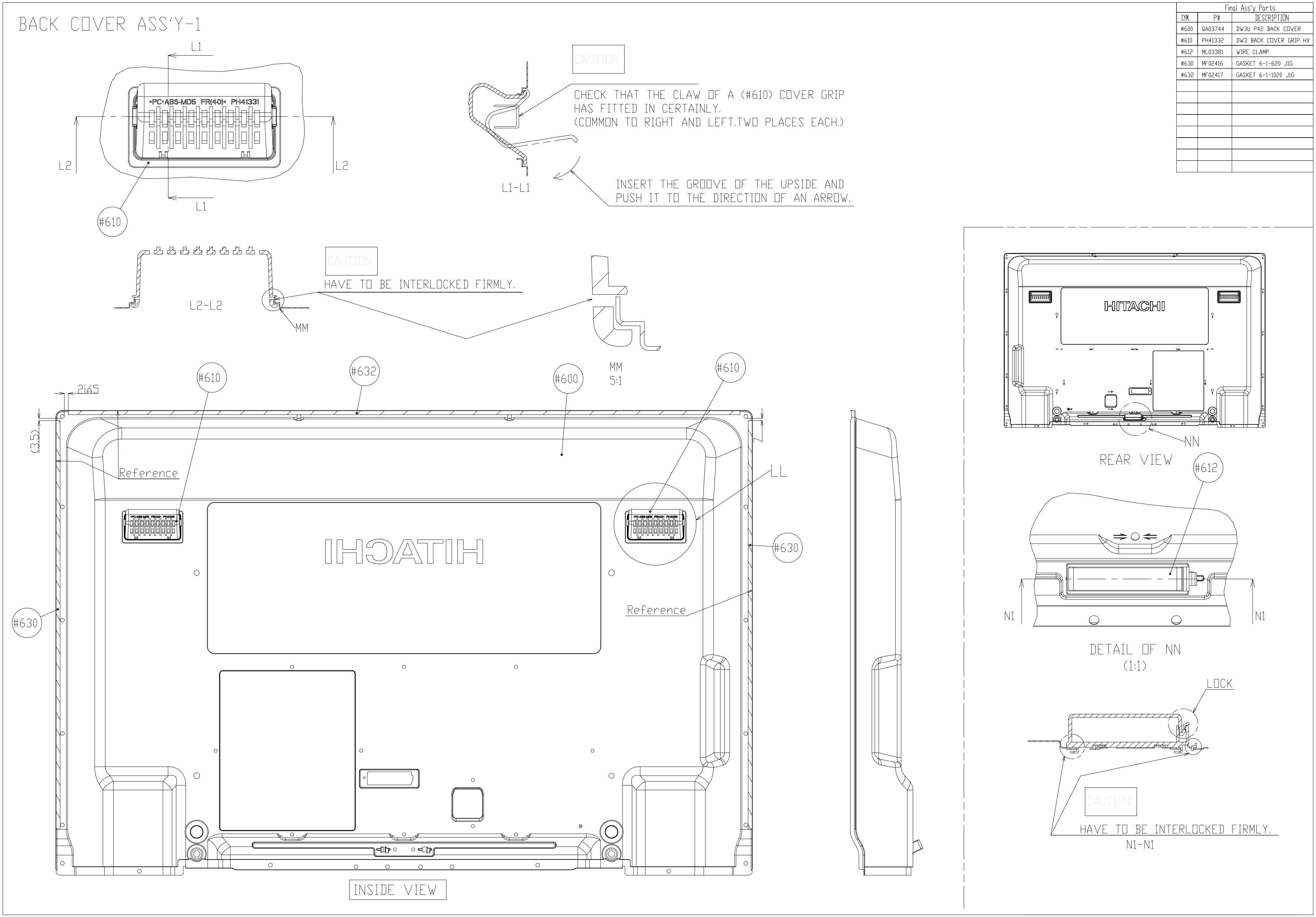

(r)
#C144
(r)*2
#C146
View XX
XX
#440
(j)*4
A11
(j)
(j)
(j)
POSITIONING PIN
POSITIONING PIN

Final Ass'y Parts		
SYM.	P#	DESCRIPTION
#440	MJ04061	SCREW M3C 4*10
#C144	ML02191	RBWS-3N
#C146	ME05751	DW3 P42 CORE COVER
#A11	UE27033	DW3C CHASSIS ASSY


#440
(j)*4
(j)
A11
(j)
(j)
H10
ADM

CAHSSIS ASS'Y-3
(REAR VIEW)

FINAL ASSEMBLY GUIDE


BACK COVER ASS'Y-1
L1
L1
L2
L2
>PC•ABS-MD5 FR(40)< PH41331
#610
CAUTION
CHECK THAT THE CLAW OF A (#610) COVER GRIP HAS FITTED IN CERTAINLY.
(COMMON TO RIGHT AND LEFT.TWO PLACES EACH.)
L1-L1
INSERT THE GROOVE OF THE UPSIDE AND PUSH IT TO THE DIRECTION OF AN ARROW.
CAUTION
HAVE TO BE INTERLOCKED FIRMLY.
L2-L2
MM
MM
5:1
#610
#632
#600
#610
2i65
(3.5)
Reference
LL
#630
#630
Reference
HITACHI
INSIDE VIEW
HITACHI
NN
REAR VIEW
#612
N1
N1
DETAIL OF NN
(1:1)
LOCK
CAUTION
HAVE TO BE INTERLOCKED FIRMLY.
N1-N1

Final Ass'y Parts		
SYM.	P#	DESCRIPTION
#600	QA03744	DW3U P42 BACK COVER
#610	PH41332	DW3 BACK COVER GRIP HX
#612	ML03381	WIRE CLAMP
#630	MF02416	GASKET 6-1-620 J1G
#632	MF02417	GASKET 6-1-1020 J1G

BACK COVER ASS'Y-2

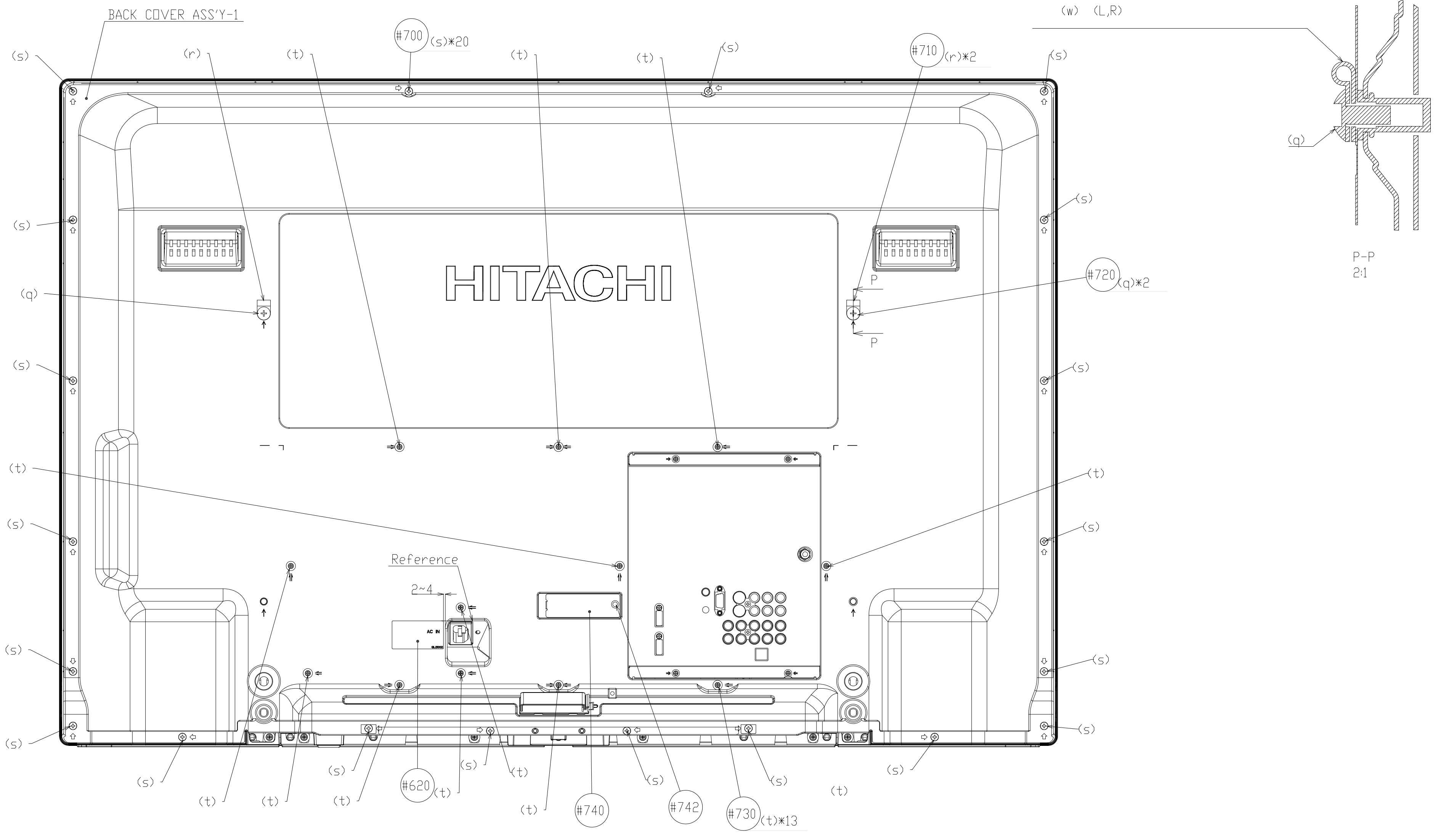
CAUTION

Handling cautions of back cover.
Have neither the upper surface, nor
the side and the under surface single hand.
handling (#610) a cover grip hole etc.
With two or more places.
Moreover, check whether there is any
modification of the cover after cover attachment.

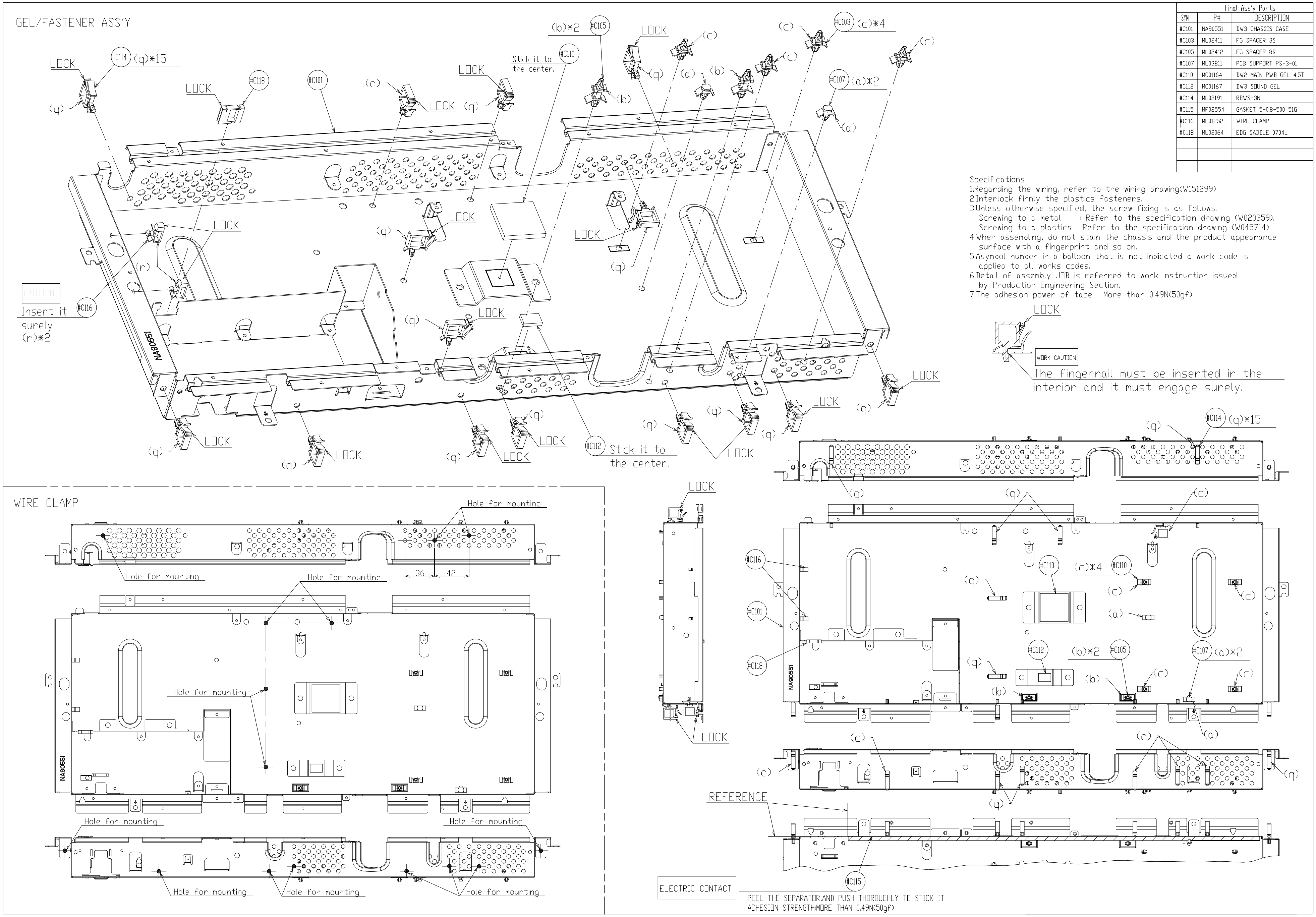
Final Ass'y Parts		
SYM.	P#	DESCRIPTION
#620	QL21002	AC LABEL 32HD
#700	MJ03568	SCREW T2D_4*16
#710	ML02112	M6 CABLE CLAMP
#720	MJ03693	SCREW M3M_6*18
#730	MJ04092	SCREW M3S 3X8
#740	NA92172	DW3 TERMINAL DOOR
#742	ML02181	PLASTIC RIVET M

CAUTION

Instralled cable clamping (#710)
on this direction.
(w) (L,R)


BACK COVER ASS'Y-1
#700 (s)*20
#710 (r)*2
#720 (q)*2
#620
#740
#742
#730 (t)*13
(s)
(r)
(t)
(q)
(w)
P
P-P
2:1
HITACHI
Reference
2~4
AC IN

FINAL ASSEMBLY GUIDE

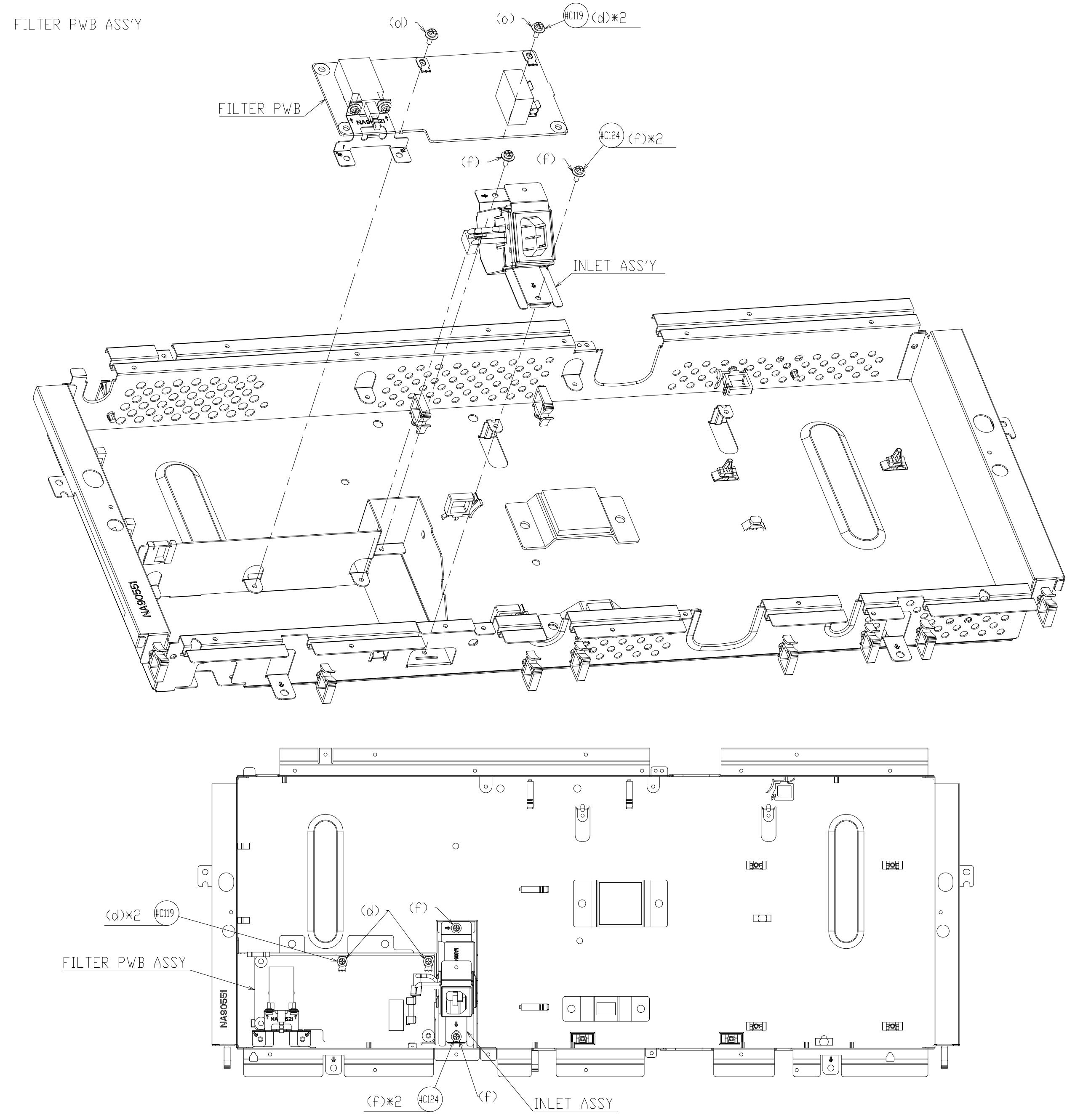

GEL/FASTENER ASS'Y
LOCK
#C114 (q)*15
(q)
LOCK
#C118
#C101
(q)
LOCK (q)
LOCK
Stick it to the center.
(b)*2 #C105
#C110
(b)
LOCK
(q)
(a) (b)
(c)
(c) #C103 (c)*4
(c)
#C107 (a)*2
(a)
LOCK
(r)
CAUTION
Insert it surely.
(r)*2
#C116
(q)
LOCK
LOCK
(q)
NA90551
LOCK
(q) LOCK
(q) LOCK
(q) LOCK
(q) LOCK
(q)
#C112 Stick it to the center.
(q) LOCK
LOCK
(q)
LOCK
WORK CAUTION
The fingernail must be inserted in the interior and it must engage surely.
WIRE CLAMP
Hole for mounting
Hole for mounting
Hole for mounting
36
42
Hole for mounting
NA90551
Hole for mounting
Hole for mounting
Hole for mounting
Hole for mounting
Hole for mounting
#C114 (q)*15
(q)
(q) (q) (q)
LOCK
#C116
#C101
#C118
#C110 (c)*4 #C110
(q)
(c)
(a)
(c)
#C112 (b)*2 #C105 #C107 (a)*2
(q)
(b)
(b)
(c)
(c)
(a)
NA90551
LOCK
(q)
(q)
(q)
(q)
(q)
REFERENCE
#C115
ELECTRIC CONTACT

PEEL THE SEPARATOR,AND PUSH THOROUGHLY TO STICK IT.
ADHESION STRENGTH:MORE THAN 0.49N(50gf)

Final Ass'y Parts		
SYM.	P#	DESCRIPTION
#C101	NA90551	DW3 CHASSIS CASE
#C103	ML02411	FG SPACER 3S
#C105	ML02412	FG SPACER 8S
#C107	ML03811	PCB SUPPORT PS-3-01
#C110	MC01164	DW2 MAIN PWB GEL 4.5T
#C112	MC01167	DW3 SOUND GEL
#C114	ML02191	RBWS-3N
#C115	MF02554	GASKET 5-0.8-500 51G
#C116	ML01252	WIRE CLAMP
#C118	ML02064	EDG SADDLE 0704L

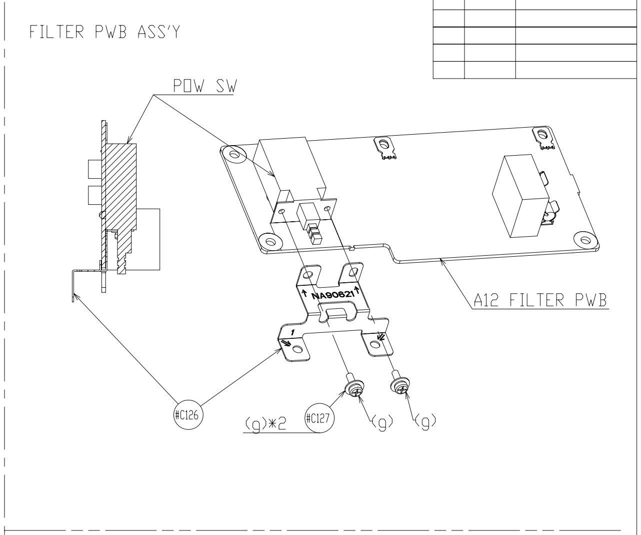
Specifications
1.Regarding the wiring, refer to the wiring drawing(W151299).
2.Interlock firmly the plastics fasteners.
3.Unless otherwise specified, the screw fixing is as follows.
  Screwing to a metal : Refer to the specification drawing (W020359).
  Screwing to a plastics : Refer to the specification drawing (W045714).
4.When assembling, do not stain the chassis and the product appearance surface with a fingerprint and so on.
5.Asymbol number in a balloon that is not indicated a work code is applied to all works codes.
6.Detail of assembly JOB is referred to work instruction issued by Production Engineering Section.
7.The adhesion power of tape : More than 0.49N(50gf)

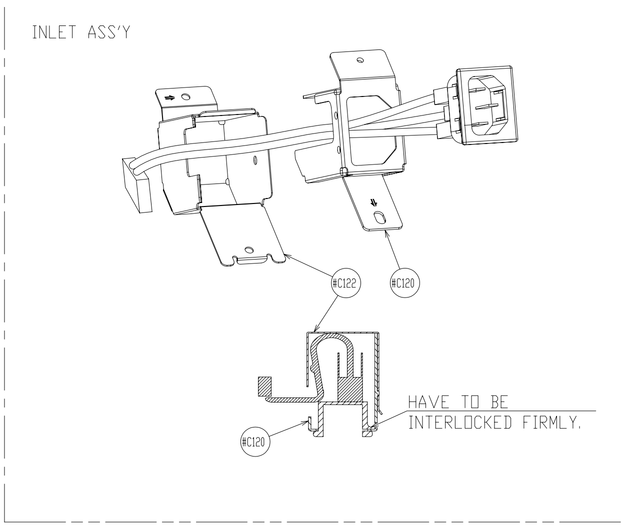
FINAL ASSEMBLY GUIDE


FILTER PWB ASS'Y
(d)
(d)
#C119
(d)*2
FILTER PWB
NA90621
#C124
(f)*2
(f)
(f)
INLET ASS'Y
NA90551
(d)*2
#C119
(d)
(f)
FILTER PWB ASSY
NA90551
(f)*2
#C124
(f)
INLET ASSY

Final Ass'y Parts

SYM.	P#	DESCRIPTION
#C119	MJ03467	SCREW M3E_3*8
#C120	NA94211	DW3 INLET BRAKET A5
#C122	NA94221	DW3 INLET CASEA5
#C124	MJ03467	SCREW M3E_3*8
#C126	NA90621	DW3 POW SW MTL
#C127	MJ03467	SCREW M3E_3*8
A12	JP55133	FILTER PWB ASS'Y

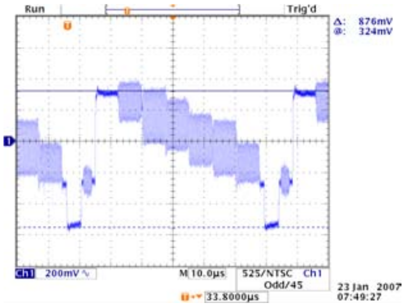

FILTER PWB ASS'Y
POW SW
NA90621
A12 FILTER PWB
#C126
(g)*2
#C127
(g)
(g)


INLET ASS'Y
#C122
#C120
HAVE TO BE
INTERLOCKED FIRMLY.
#C120

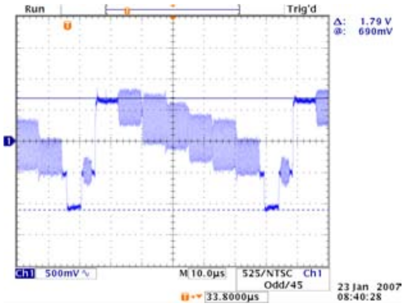
WAVEFORMS

Numbers inside circle correspond to locations shown in the circuit diagram. Waveforms taken using an NTSC Color Bar signal and a X10 probe. The amplitude of the waveform is shown as Δ.

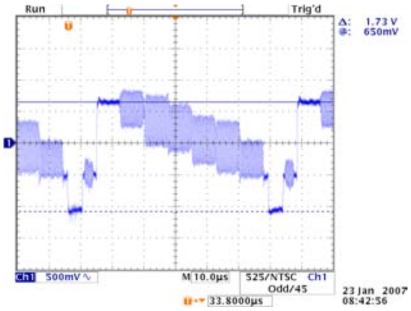
① UT01 Pin 13 TunerM_CV (out)



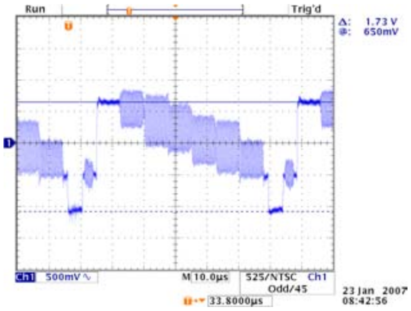
② JY02 Pin 4 Monitor-Out



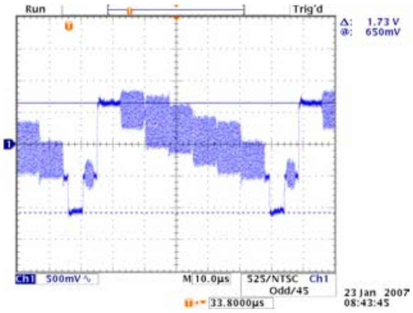
③ I001 Pin 26 TunerM_CV (in)



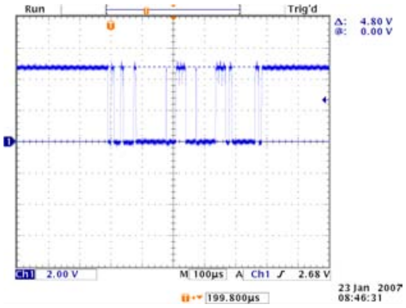
④ I001 Pin 28 MAIN_Y/V (out)



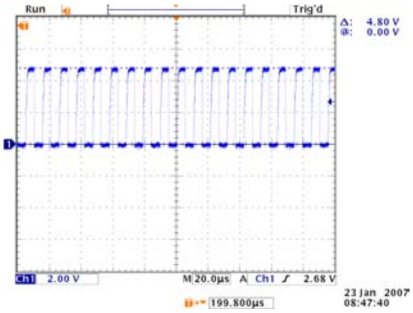
⑤ I001 Pin 32 SUB_Y/V (out)



⑥ I001 Pin 44 I^{2}C DATA



⑦ I001 Pin 45 I^{2}C CLK



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DC VOLTAGES

(42" Models only)

Symbol	Pin No.	Voltage
CN64	1	(Va) 65.2
	2	GND
	3	5.1 V
	4	GND
	5	GND
	6	NC
	7	(Vs) 82.7 V
	8	NC
	9	(-Vs) -82.7 V

Symbol	Pin No.	Voltage
CN68	1	5.1 V
	2	GND
	3	NC
	4	GND
	5	1.7 V
	6	1.4 V
	7	3.2 V
	8	3.1 V
	9	NC

Symbol	Pin No.	Voltage
PFA1	1	6.2 V
	2	0
	3	GND

Symbol	Pin No.	Voltage
CNPPS	1	5.8 V
	2	5.8 V
	3	5.8 V
	4	GND
	5	GND
	6	GND
	7	10 V
	8	GND
	9	16 V
	10	GND
	11	GND
	12	GND
	13	12 V
	14	12 V
	15	12 V

Symbol	Pin No.	Voltage
CN63	1	5 V
	2	GND
	3	NC
	4	0
	5	3.1 V
	6	5.1 V
	7	3.3 V
	8	NC

Symbol	Pin No.	Voltage
PTC	1	-
	2	-
	3	-
	4	-
	5	-
	6	-
	7	-
	8	-
	9	-
	10	9.2 V

Symbol	Pin No.	Voltage
PSC	1	5.2 V
	2	5.2 V
	3	5.2 V
	4	GND

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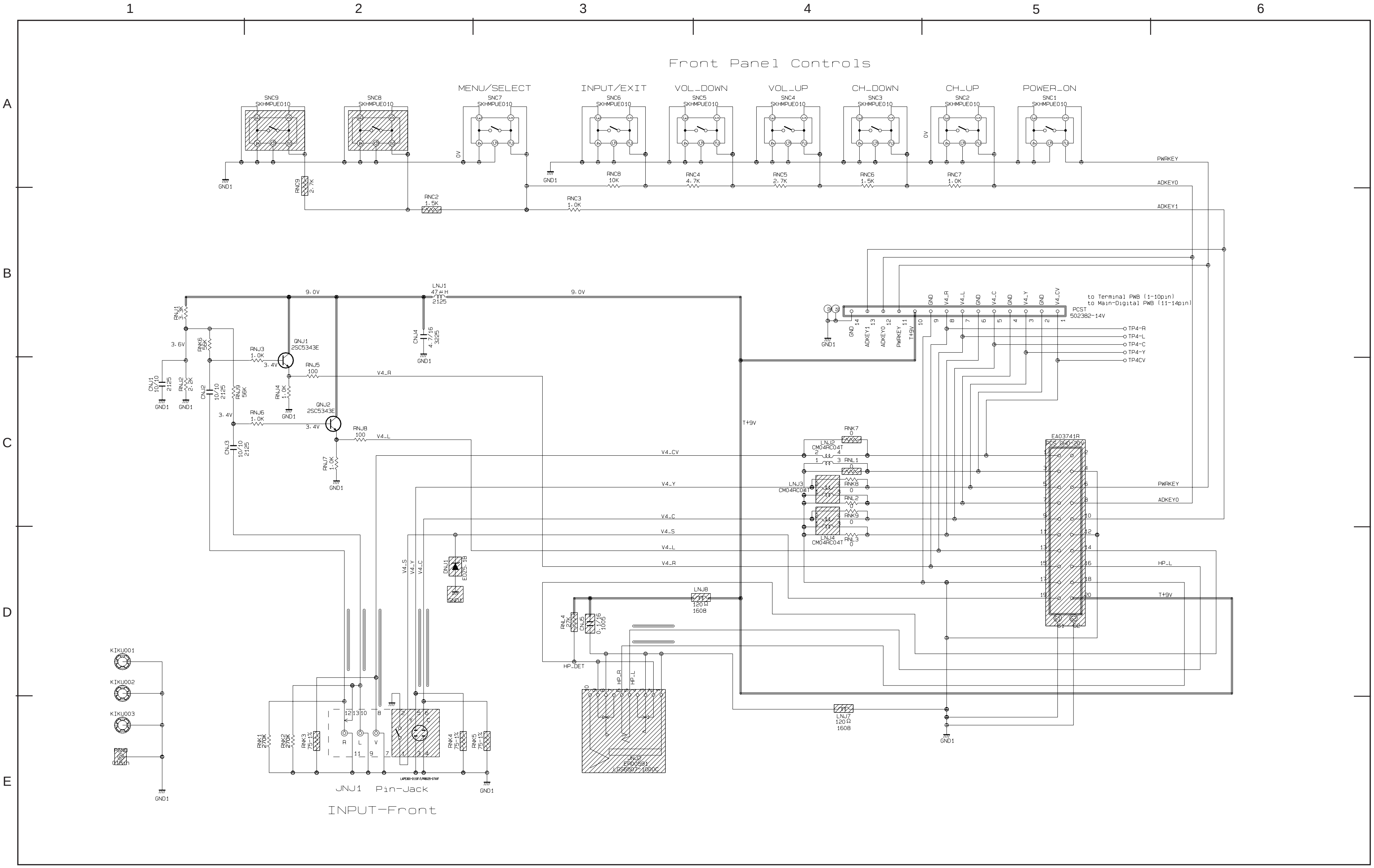
BASIC CIRCUIT DIAGRAM

PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.


1
2
3
4
5
6
A
B
C
D
E
Front Panel Controls
MENU/SELECT
INPUT/EXIT
VOL_DOWN
VOL_UP
CH_DOWN
CH_UP
POWER_ON
SNC9 SKHMPUE010
SNC8 SKHMPUE010
SNC7 SKHMPUE010
SNC6 SKHMPUE010
SNC5 SKHMPUE010
SNC4 SKHMPUE010
SNC3 SKHMPUE010
SNC2 SKHMPUE010
SNC1 SKHMPUE010
0V
GND1
RNC9 2.7K
RNC2 1.5K
RNC3 1.0K
RNC8 10K
RNC4 4.7K
RNC5 2.7K
RNC6 1.5K
RNC7 1.0K
PWRKEY
ADKEY0
ADKEY1
9.0V
LNJ1 47μH 2125
CNJ4 4.7/16 3225
RNJ1 3.3K
3.6V
RNK6 56K
RNJ3 1.0K
3.4V
QNJ1 2SC5343E
RNJ5 100
V4_R
CNJ1 10/10 2125
RNJ2 2.2K
CNJ2 10/10 2125
RNJ9 56K
RNJ4 1.0K
QNJ2 2SC5343E
RNJ6 1.0K
RNJ8 100
V4_L
CNJ3 10/10 2125
RNJ7 1.0K
T+9V
GND
V4_R
V4_L
V4_C
V4_Y
V4_CV
to Terminal PWB (1-10pin)
to Main-Digital PWB (11-14pin)
PCST 502382-14V
ADKEY1
ADKEY0
PWRKEY
TP4-R
TP4-L
TP4-C
TP4-Y
TP4CV
RNK7 0
LNJ2 CM04RC04T
RNL1 0
LNJ3 CM04RC04T
RNK8 0
RNL2 0
RNK9 0
LNJ4 CM04RC04T
RNL3 0
EA03741R
PCS GHD-20V
V4_CV
V4_Y
V4_C
V4_S
HP_L
DNJ1 EDZ5.1B
LNJ8 120Ω 1608
RNL4 27K
CNJ5 0.1/16 1005
HP_DET
HP_R
HP_L
JNJ2 ER00591 LGS6507-1000C
LNJ7 120Ω 1608
KIKU001
KIKU002
KIKU003
PGND 01Bih
RNK1 270K
RNK2 270K
RNK3 75-1%
RNK4 75-1%
RNK5 75-1%
R
L
V
Y
C
LAP5300-0110F/LPR8029-07XXF
JNJ1 Pin-Jack
INPUT-Front

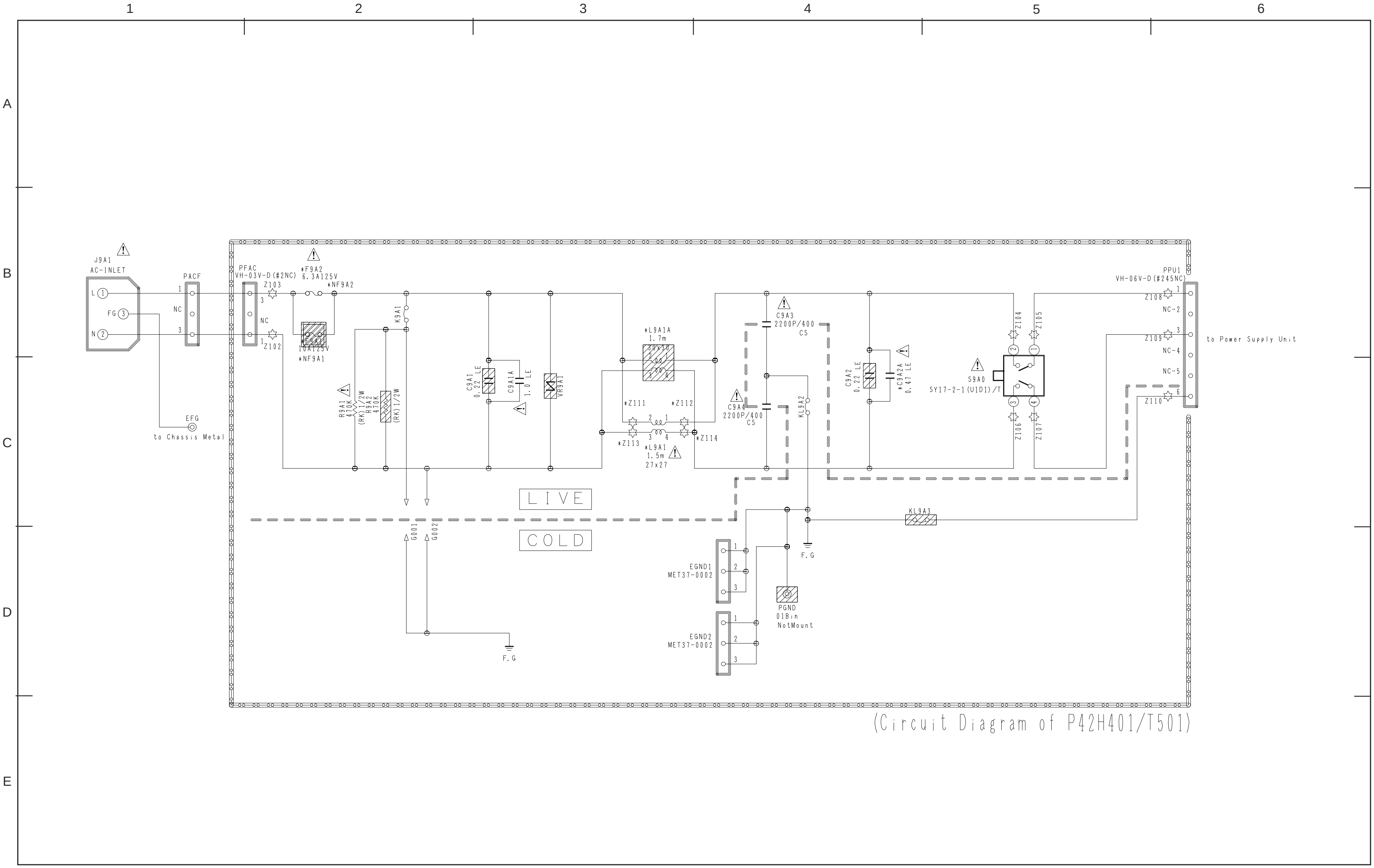
- All DC voltage to be measured with a tester (100 kΩ/V). Voltage taken on a complex color bar including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

CONTROL

TABLE OF CONTENTS

BASIC CIRCUIT DIAGRAM

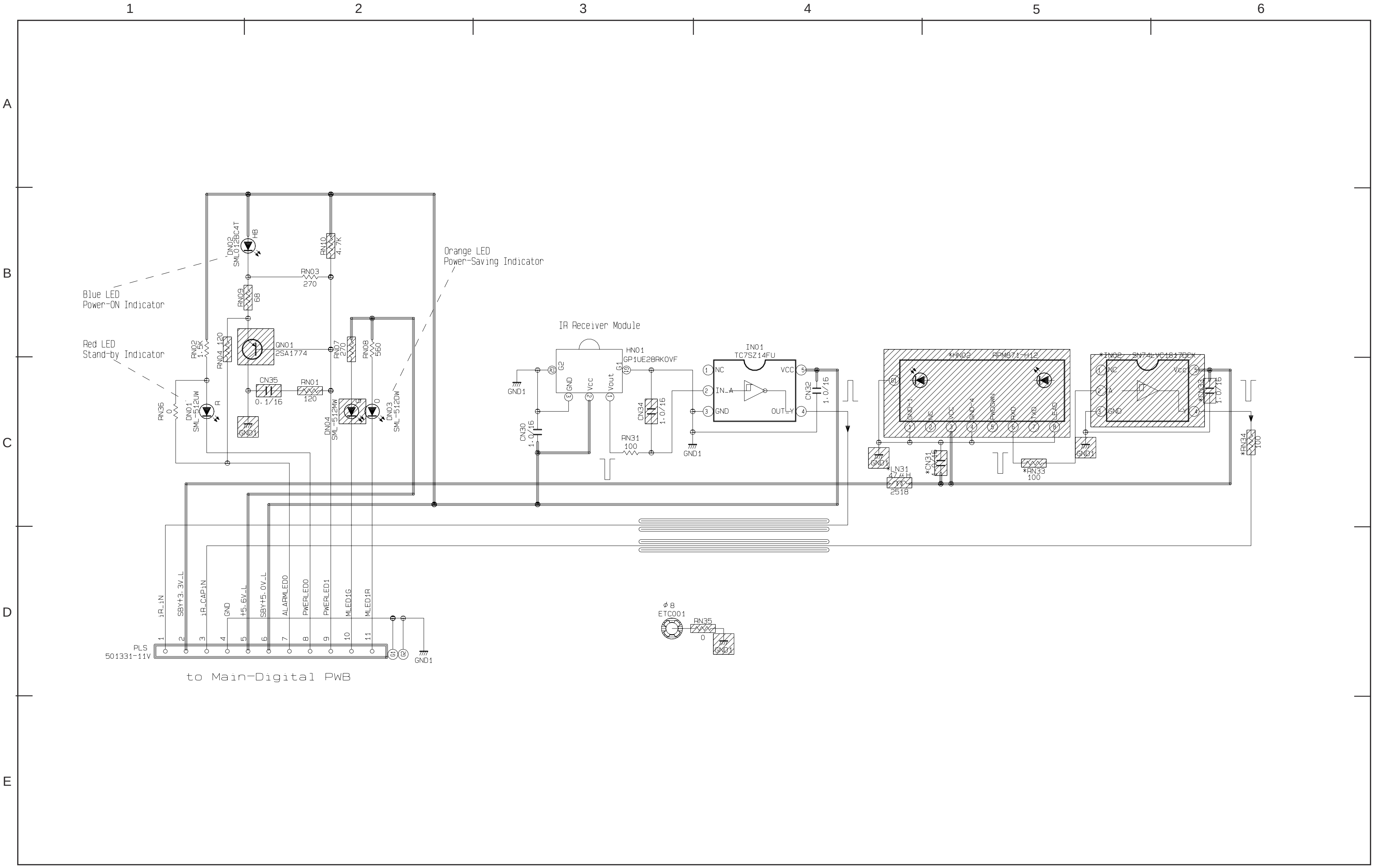
PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.


1
2
3
4
5
6
A
B
C
D
E
J9A1
AC-INLET
L 1
FG 3
N 2
PACF
1
NC
3
EFG
to Chassis Metal
PFAC
VH-03V-D(#2NC)
3
NC
1
Z103
Z102
*F9A2
6.3A125V
*NF9A2
*F9A1
10A125V
*NF9A1
K9A1
R9A1
470K
(RK)1/2W
R9A2
470K
(RK)1/2W
C9A1
0.22 LE
C9A1A
1.0 LE
VR9A1
*L9A1A
1.7m
30x30
*Z111
*Z112
*Z113
*Z114
*L9A1
1.5m
27x27
C9A3
2200P/400
CS
C9A4
2200P/400
CS
KL9A2
C9A2
0.22 LE
*C9A2A
0.47 LE
S9A0
SY17-2-1(U1D1)/T
Z104
Z105
Z106
Z107
PPU1
VH-06V-D(#245NC)
1
Z108
NC-2
3
Z109
NC-4
NC-5
6
Z110
to Power Supply Unit
LIVE
COLD
G001
G002
F.G
KL9A3
F.G
EGND1
MET37-0002
EGND2
MET37-0002
PGND
01Bin
NotMount
(Circuit Diagram of P42H401/T501)

- All DC voltage to be measured with a tester (100 kΩ/V). Voltage taken on a complex color bar including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

BASIC CIRCUIT DIAGRAM

PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

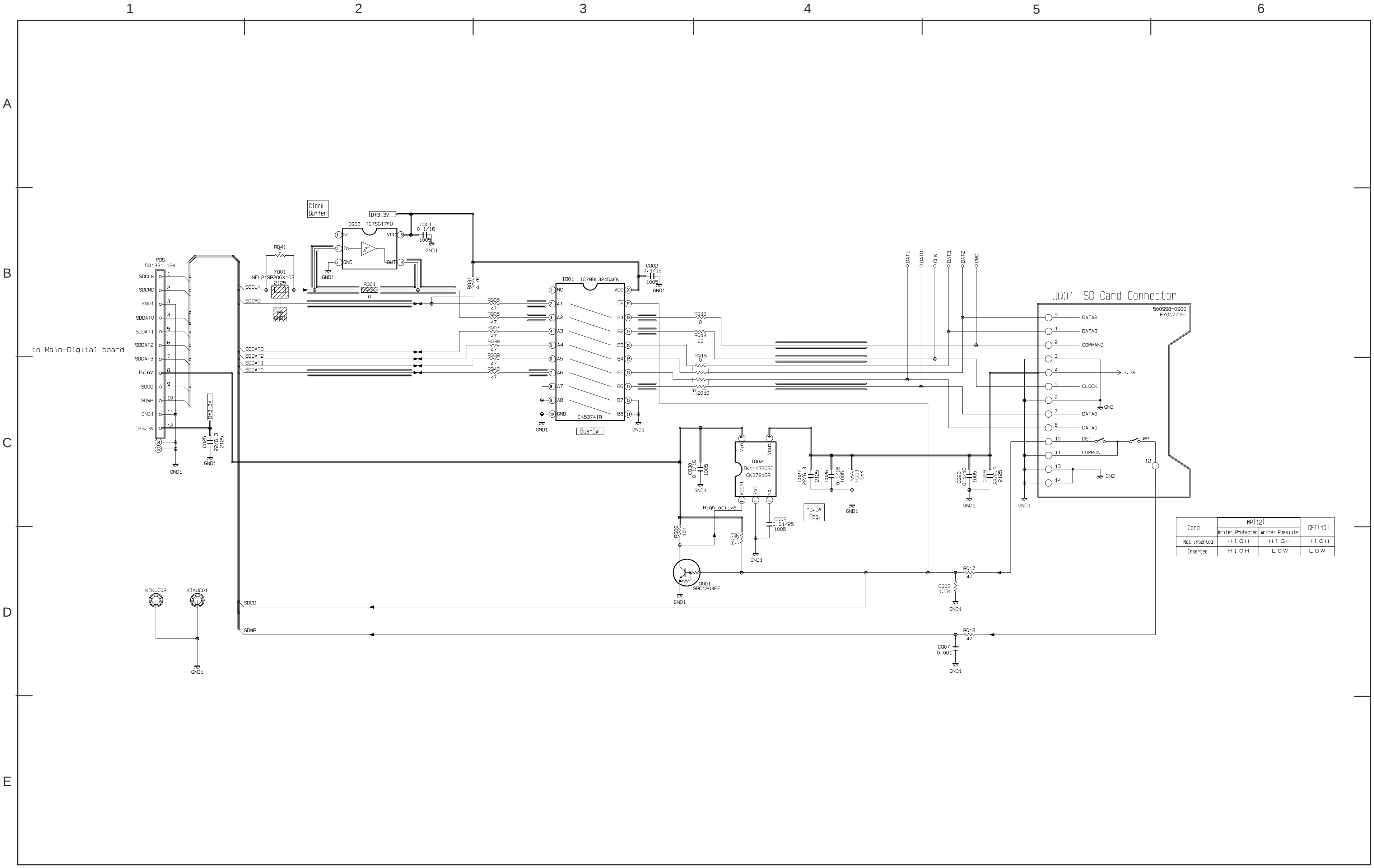

1
2
3
4
5
6
A
B
C
D
E
Blue LED
Power-ON Indicator
Red LED
Stand-by Indicator
Orange LED
Power-Saving Indicator
DN02
SML012BC4T
HB
RN10
4.7K
RN03
270
RN09
68
RN02
1.5K
RN04 120
QN01
2SA1774
RN07
270
RN08
560
CN35
0.1/16
RN01
120
GND1
RN36
0
DN01
SML-512UW
R
DN04
SML-512MW
G
O
DN03
SML-512DW
IR Receiver Module
HN01
GP1UE28RK0VF
G2
G1
GND
Vcc
Vout
CN30
1.0/16
CN34
1.0/16
RN31
100
IN01
TC7SZ14FU
NC
IN_A
GND
VCC
OUT_Y
CN32
1.0/16
*HN02
RPM871-H12
GND-1
NC
VCC
GND-4
PWDOWN
RXD
TXD
LEAD
*LN31
47μH
2518
*CN31
1.0/16
*RN33
100
*IN02
SN74LVC1G17DCK
NC
A
GND
Vcc
Y
*CN33
1.0/16
*RN34
100
iR_iN
SBY+3.3V_L
iR_CAPiN
GND
+5.6V_L
SBY+5.0V_L
ALARMLED0
PWERLED0
PWERLED1
MLED1G
MLED1R
PLS
501331-11V
to Main-Digital PWB
ϕ8
ETC001
RN35
0

- All DC voltage to be measured with a tester (100 kΩ/V). Voltage taken on a complex color bar including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

LED

BASIC CIRCUIT DIAGRAM

PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.


1
2
3
4
5
6
A
B
C
D
E
to Main-Digital board
PDS
501331-12V
SDCLK 1
SDCMD 2
GND1 3
SDDAT0 4
SDDAT1 5
SDDAT2 6
SDDAT3 7
+5.6V 8
SDCD 9
SDWP 10
GND1 11
D+3.3V 12
G1
G2
GND1
D+3.3V
CQ25
22/6.3
2125
Clock Buffer
D+3.3V
IQ03 TC7SG17FU
NC
IN
GND
VCC
OUT
CQ01
0.1/16
1005
RQ41
0
XQ01
NFL21SP206X1C3
2125
RQ01
0
RQ31
4.7K
SDCLK
SDCMD
SDDAT3
SDDAT2
SDDAT1
SDDAT0
RQ05 47
RQ06 47
RQ07 47
RQ38 47
RQ39 47
RQ40 47
IQ01 TC7MBL3245AFK
NC
A1
A2
A3
A4
A5
A6
A7
A8
GND
VCC
OE
B1
B2
B3
B4
B5
B6
B7
B8
CK53741R
Bus-SW
CQ02
0.1/16
1005
RQ13
0
RQ14
22
RQ15
0
2010
DAT1
DAT0
CLK
DAT3
DAT2
CMD
JQ01 SD Card Connector
500998-0900
EY01772R
9 DATA2
1 DATA3
2 COMMAND
3
4 3.3V
5 CLOCK
6 GND
7 DATA0
8 DATA1
10 DET
11 COMMON
WP
12
13
14 GND
CQ30
0.1/16
1005
IQ02
TK11133CSC
CK37216R
Vin
Vout
Vcont
GND
Np
High active
CQ08
0.01/25
1005
+3.3V Reg.
CQ27
22/6.3
2125
CQ26
0.1/16
1005
RQ11
56K
CQ28
0.1/16
1005
CQ29
22/6.3
2125
RQ09
10K
RQ21
1.2K
QQ01
SRC1204EF
RQ17
47
CQ06
1.5K
RQ18
47
CQ07
0.001
SDCD
SDWP
KIKUC02
KIKUC01
GND1

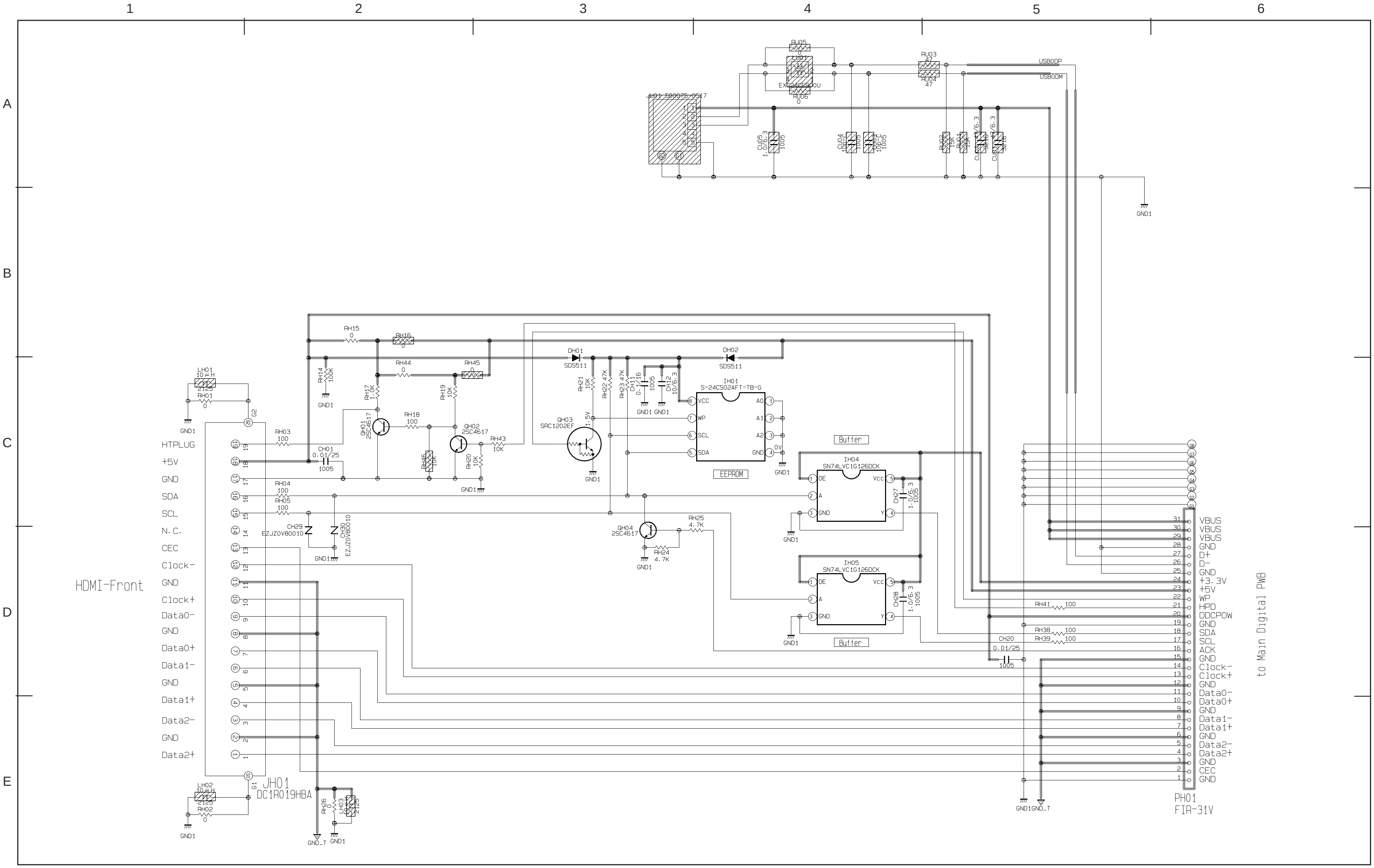
Card	WP(12)		DET(10)
	Write: Protected	Write: Possible	
Not inserted	HIGH	HIGH	HIGH
Inserted	HIGH	LOW	LOW

- All DC voltage to be measured with a tester (100 kΩ/V). Voltage taken on a complex color bar including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

SD

BASIC CIRCUIT DIAGRAM

PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

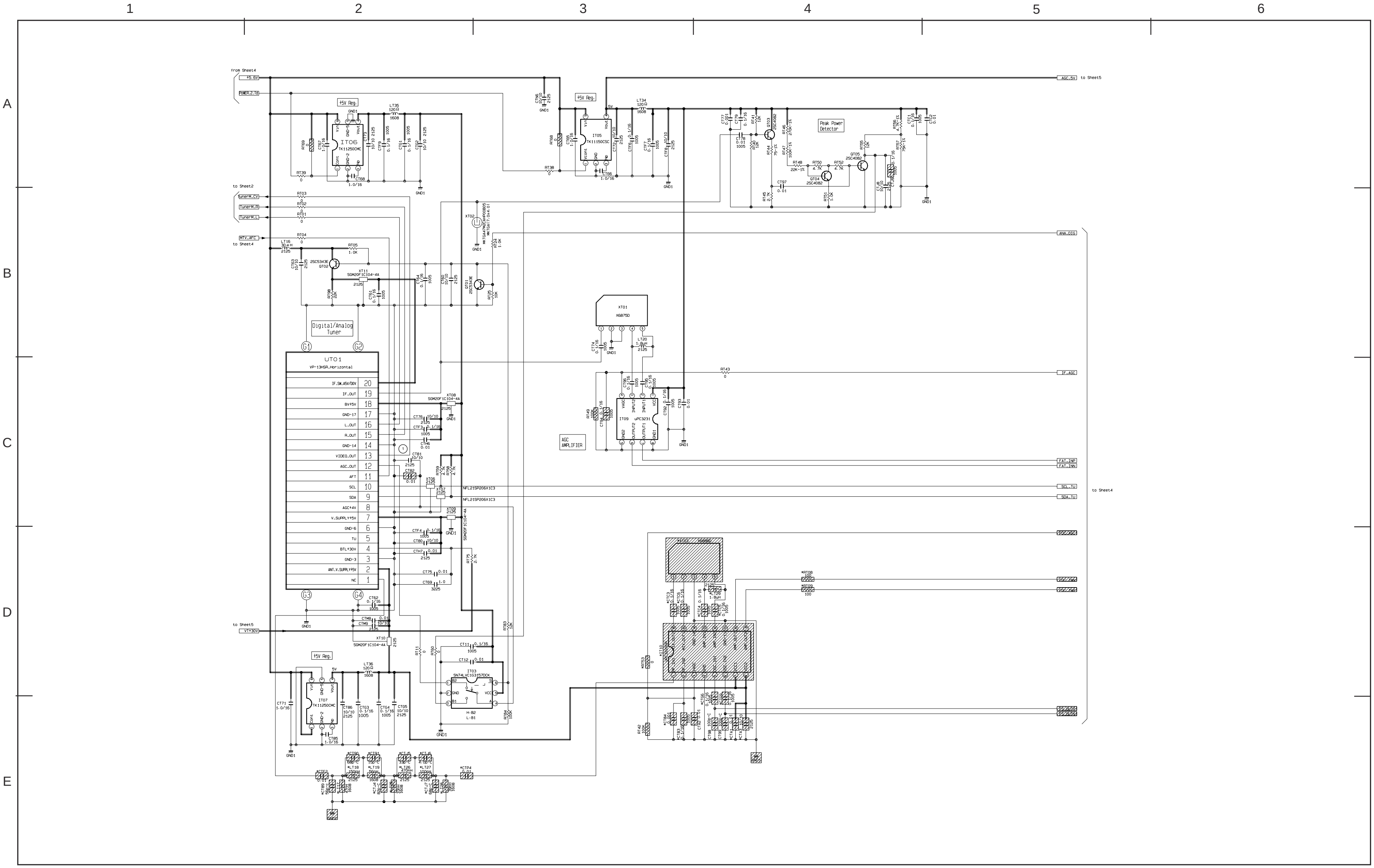

1
2
3
4
5
6
A
B
C
D
E
RU05 0
LU01
EXC24CE900U
RU06 0
RU03 47
RU04 47
USB0DP
USB0DM
JU01 500075 0517
G2
G1
CU05 1.0/6.3 1005
CU04 10P-C 1005
CU03 10P-C 1005
RU02 15K
RU01 15K
CU02 47/6.3 3216
CU01 47/6.3 3216
GND1
RH15 0
RH16 0
RH44 0
RH45 0
RH14 100K
LH01 10µH 2125
RH01 0
RH17 1.0K
RH19 10K
RH18 100
QH01 2SC4617
QH02 2SC4617
RH46 10K
RH20 10K
RH43 10K
RH03 100
CH01 0.01/25 1005
RH04 100
RH05 100
CH29 EZJZ0V80010
CH30 EZJZ0V80010
DH01 SDS511
DH02 SDS511
RH21 10K
RH22 47K
RH23 47K
CH11 0.1/16 1005
CH12 10/6.3
QH03 SRC1202EF
1.5V
IH01 S-24CS02AFT-TB-G
VCC
WP
SCL
SDA
A0
A1
A2
GND
0V
EEPROM
QH04 2SC4617
RH25 4.7K
RH24 4.7K
Buffer
IH04 SN74LVC1G126DCK
OE
A
GND
Vcc
Y
CH27 1.0/6.3 1005
IH05 SN74LVC1G126DCK
CH28 1.0/6.3 1005
RH41 100
RH38 100
RH39 100
CH20 0.01/25 1005
HTPLUG
+5V
GND
SDA
SCL
N.C.
CEC
Clock-
GND
Clock+
Data0-
GND
Data0+
Data1-
GND
Data1+
Data2-
GND
Data2+
HDMI-Front
JH01 DC1R019HBA
LH02 10µH 2125
RH02 0
RH26 0
LH03 2125
GND_T
VBUS
VBUS
VBUS
GND
D+
D-
GND
+3.3V
+5V
WP
HPD
DDCPOW
GND
SDA
SCL
ACK
GND
Clock-
Clock+
GND
Data0-
Data0+
GND
Data1-
Data1+
GND
Data2-
Data2+
GND
CEC
GND
PH01 FIR-31V
to Main Digital PWB
GND1 GND_T

- All DC voltage to be measured with a tester (100 kΩ/V). Voltage taken on a complex color bar including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

SD

BASIC CIRCUIT DIAGRAM

PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

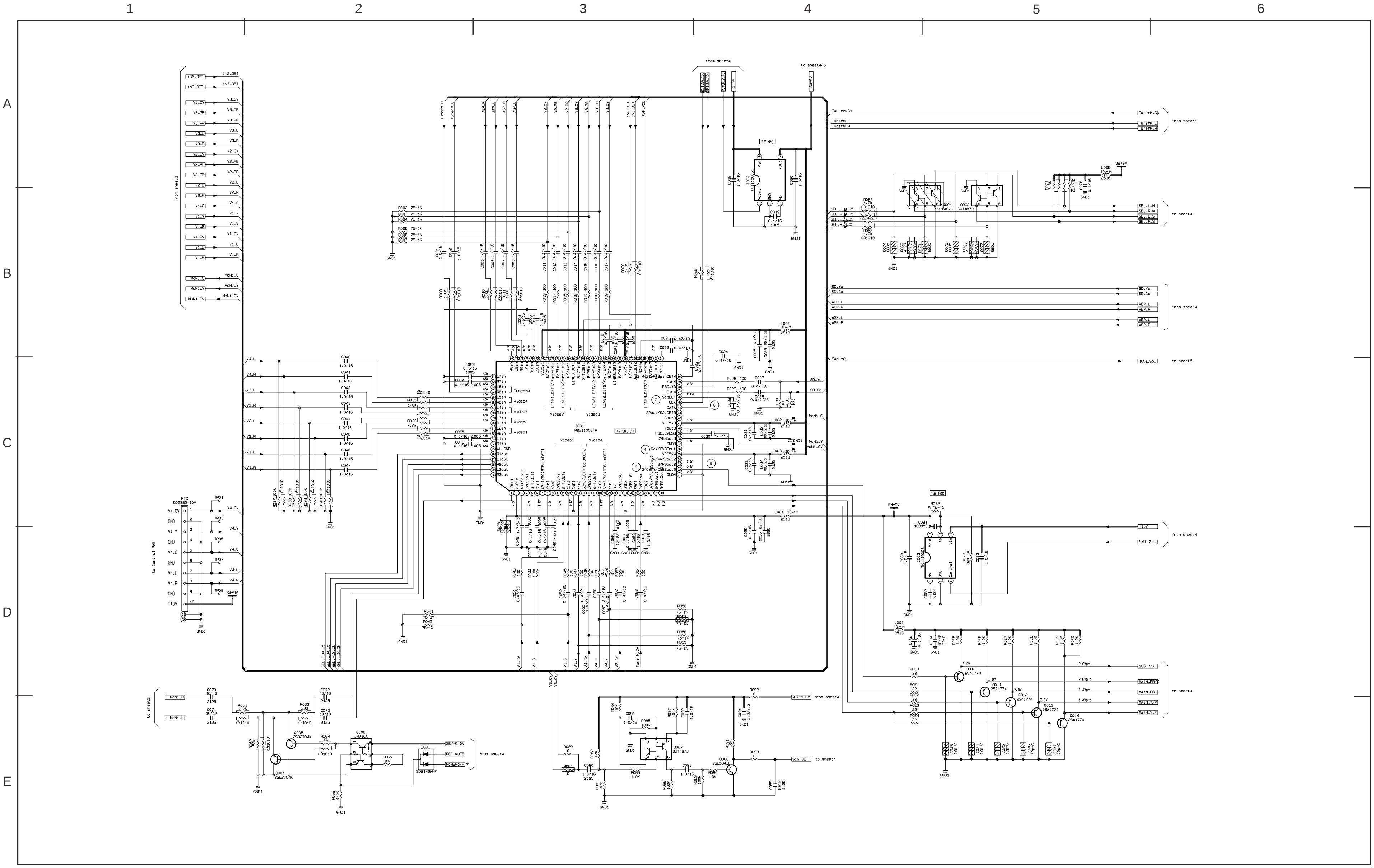

1
2
3
4
5
6
A
B
C
D
E
from Sheet4
+5.6V
POWER_2_Td
+5V Reg.
IT06
TK11250CMC
Vin
GND-5
Vout
Cont
GND-2
Np
GND1
LT35
120Ω
1608
RT69
0
CT67
1.0/16
CT73
10/10 2125
CTF9
0.1/16 1005
CTG1
0.1/16 1005
CTG2
10/10 2125
RT39
0
CT68
1.0/16
CTN6
10/10
2125
+5V Reg.
IT05
TK11150CSC
Vcont
GND
5V
LT34
120Ω
1608
RT68
0
CT65
1.0/16
CT72
10/10 2125
CTF6
0.1/16 1005
CTF7
0.1/16 1005
CTF8
10/10 2125
RT38
0
CT66
1.0/16
CT77
0.001
CT79
0.1/16
RT41
12K
QT03
2SC4082
CT78
0.01
1005
RT40
12K
RT44
75-1%
RT46
270K-1%
RT47
100K-1%
Peak Power Detector
RT48
22K-1%
RT50
4.7K
RT52
4.7K
QT04
2SC4082
QT05
2SC4082
CT97
0.01
RT45
2.7K
RT51
1.0K
RT55
12K
RT56
4.7K-1%
RT57
75K-1%
CTJ8
10/10
2125
CTJ9
0.1/16
1005
CTC1
0.1/16
1005
CTC2
0.01
AGC_5V
to Sheet5
to Sheet2
TunerM_CV
TunerM_R
TunerM_L
RT03
0
RT02
0
RT01
0
MTV_AFC
to Sheet4
RT04
0
LT16
30μH
2125
RT05
1.0K
CT63
10/10
2125
2SC5343E
QT02
XT11
SGM20F1C104-4A
2125
RT98
22K
CT61
0.1/16
1005
CT64
0.1/16
1005
CT60
10/10
2125
QT01
2SC5343E
RT25
10K
XT02
MKTGA47M2CAHP00B05
MKTGA(7.0x4.0)
RT24
1.0K
ANA_DIG
Digital/Analog Tuner
G1
G2
G3
G4
UT01
VP-13HSR_Horizontal
IF_SW_A5V/D0V
IF_OUT
BV+5V
GND-17
L_OUT
R_OUT
GND-14
VIDEO_OUT
AGC_OUT
AFT
SCL
SDA
AGC+4V
V_SUPPLY+5V
GND-6
TU
BTL+30V
GND-3
ANT_V_SUPPLY+5V
NC
XT08
SGM20F1C104-4A
2125
CT76
10/10
2125
CTF3
0.1/16
1005
CTH6
0.01
CT81
10/10
2125
CT82
0.01
RT59
4.7K
RT58
4.7K
XT06
2125
XT07
2125
NFL21SP206X1C3
NFL21SP206X1C3
XT09
2125
SGM20F1C104-4A
CTF4
0.1/16
1005
CT80
10/10
CTH7
0.01
2125
RT75
2.7K
CT75
0.01
CT69
1.0
3225
CT62
0.1/16
1005
CTM8
0.01
CTM9
10/10
2125
XT10
SGM20F1C104-4A
2125
to Sheet5
VT+30V
RT83
12K
RT11
0
RT60
0
CT11
0.1/16
1005
CT12
0.01
IT03
SN74LVC1G3157DCK
B2
GND
B1
S
VCC
A
H:B2
L:B1
RT84
100K
+5V Reg.
IT07
TK11250CMC
LT36
120Ω
1608
CT71
1.0/16
CT86
10/10
2125
CTG3
0.1/16
1005
CTG4
0.1/16
1005
CTG5
10/10
2125
CT85
1.0/16
*CTF2
0.01
*CT90
68p-C
*CT91
15p-C
*CTJ5
33p-C
*CTJ6
4.0p-C
*LT18
150nH
2125
*LT19
56nH
1608
*LT26
470nH
2125
*LT27
100nH
2125
*CT89
56p-C
*LT17
47nH
1608
*CTJ4
82p-C
*LT25
33nH
1608
*CTJ7
68p-C
*LT28
39nH
1608
*CTP4
0.01
XT01
X6875D
CT74
0.1/16
1005
LT20
1.8uH
2125
RT43
0
IF_AGC
CT96
0.1/16
1005
CT95
0.1/16
1005
RT49
100K
CT94
0.1/16
1005
IT09
uPC3231
VAGC
INPUT2
INPUT1
VCC
GND2
OUTPUT2
OUTPUT1
GND1
CT92
0.1/16
1005
CT93
0.01
AGC AMPLIFIER
FAT_INP
FAT_INN
SCL_TU
SDA_TU
to Sheet4
FDC_AGC
*XT03
X6888D
*RT08
100
*RT09
100
FDC_INN
FDC_INP
*CTC3
0.1/16
1005
*CTC6
0.1/16
1005
*CTC4
0.1/16
1005
*CTC5
0.1/16
1005
*LT29
1.8uH
2125
*IT10
uPC3220GR
MIX_OUT2
MIX_OUT1
GND-14
AMP_IN1
AMP_IN2
GND-11
AMP_OUT1
AMP_OUT2
RF_IN1
RF_IN2
VAGC
GND
OSC_IN1
OSC_IN2
VCC1
VCC2
*RT53
0
RT42
100K
*CTB4
0.001
*CTB3
0.1/16
1005
CTA2
0.01
*CTG6
0.1/16
1005
*CTG9
0.1/16
1005
CT98
100p-C
CT99
100p-C
*CTA1
0.01
*CTA3
10/10
2125
FS_OUTP
FS_OUTN

- All DC voltage to be measured with a tester (100 kΩ/V). Voltage taken on a complex color bar including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

TERMINAL

BASIC CIRCUIT DIAGRAM

PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.


1
2
3
4
5
6
A
B
C
D
E
IC001
R2S11008FP
AV SWITCH
from sheet1
from sheet3
from sheet4
to sheet4
to sheet5
to Control PWB
to sheet3

- All DC voltage to be measured with a tester (100 kΩ/V). Voltage taken on a complex color bar including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

TERMINAL

BASIC CIRCUIT DIAGRAM

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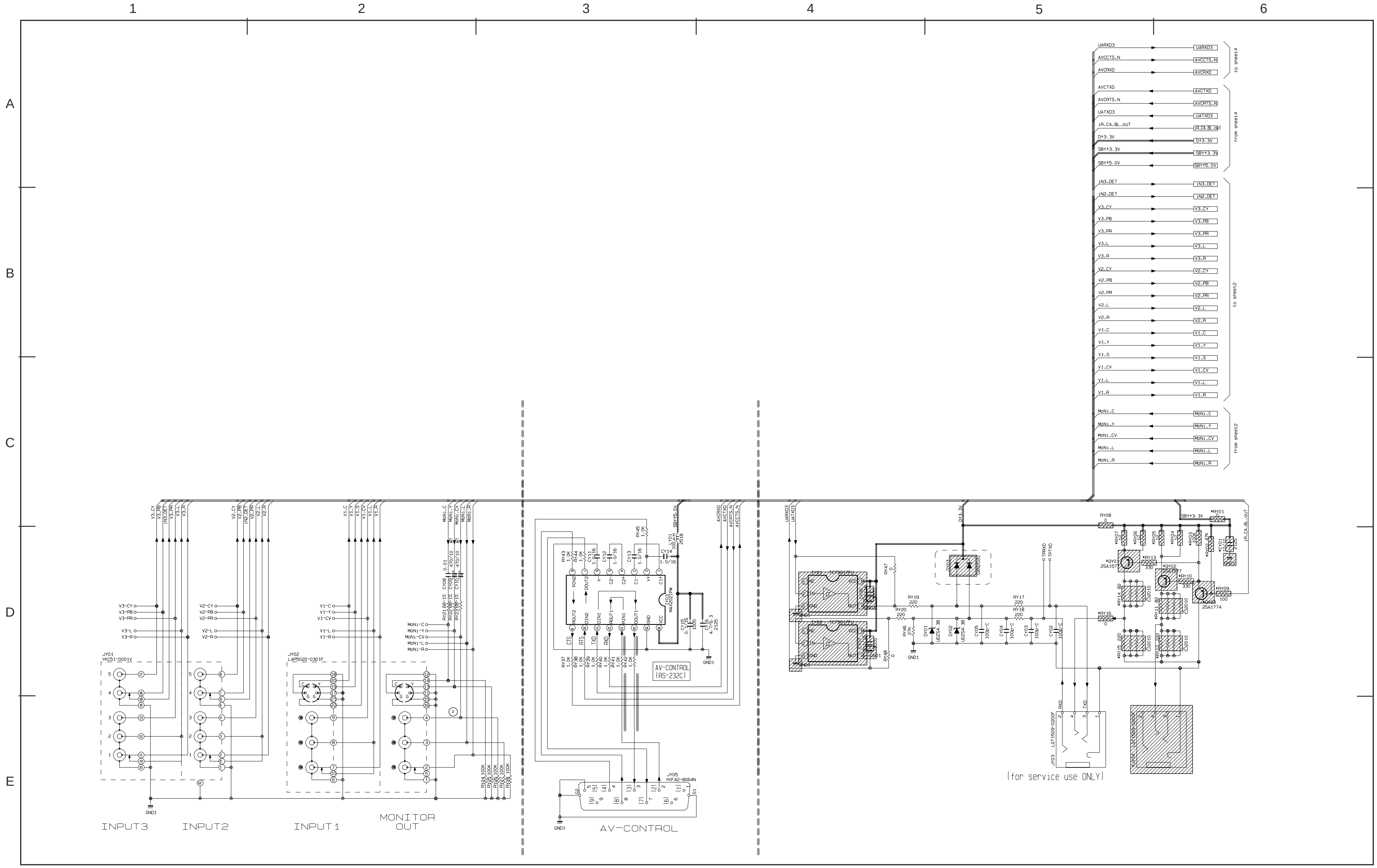
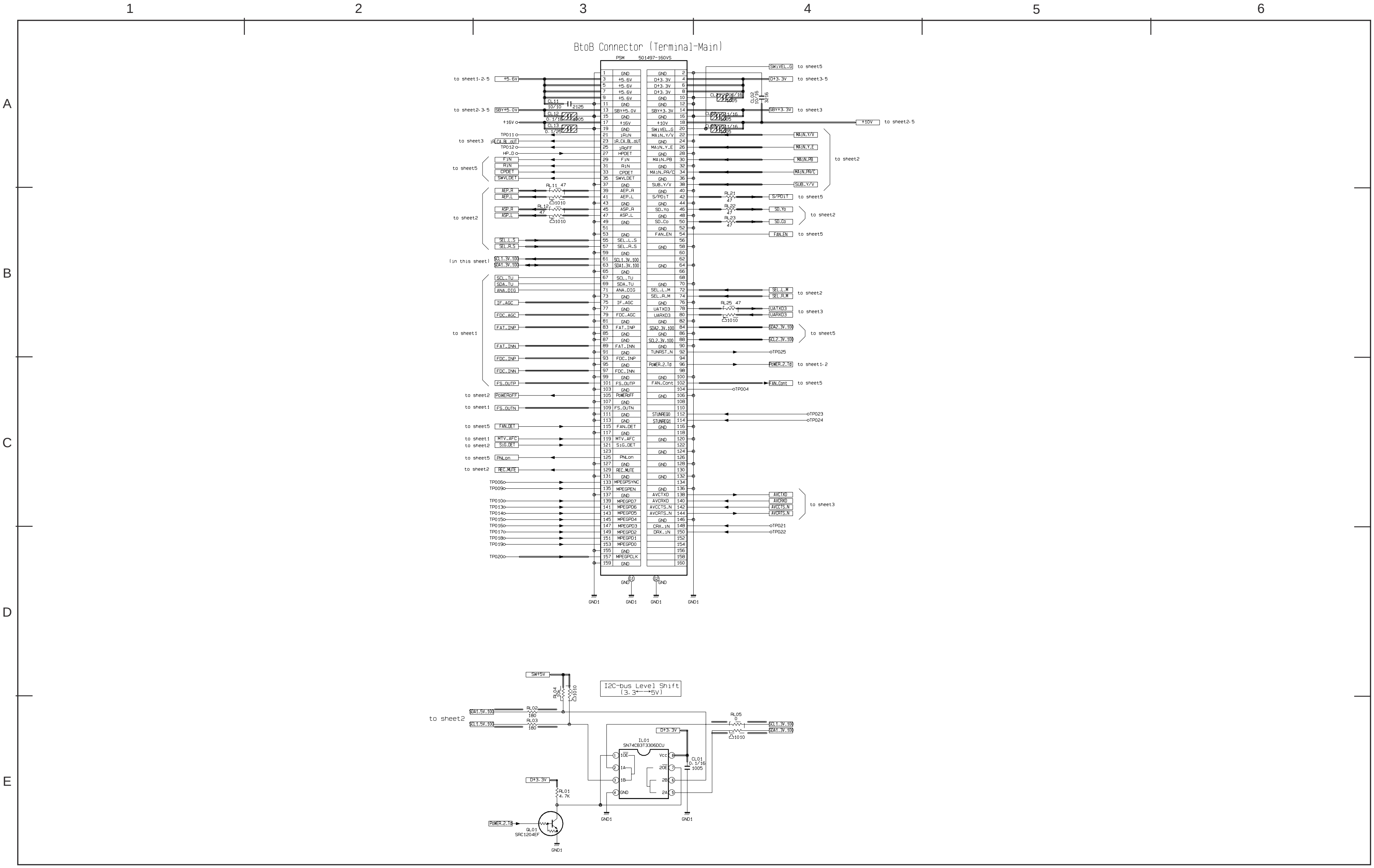

1
2
3
4
5
6
A
B
C
D
E
INPUT3
INPUT2
INPUT1
MONITOR OUT
AV-CONTROL
AV-CONTROL (RS-232C)
(for service use ONLY)
to sheet4
from sheet4
to sheet2
from sheet2
JY01 YKC51-0001V
JY02 LAP5020-0301F
JY05 YKF42-8064N
JY03 LGT1509-0200F
GND1
SBY+3.3V
SBY+5.0V
D+3.3V

TERMINAL

- All DC voltage to be measured with a tester (100 kΩ/V). Voltage taken on a complex color bar including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

BASIC CIRCUIT DIAGRAM

PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.


1
2
3
4
5
6
A
B
C
D
E
BtoB Connector (Terminal-Main)
PSM 501497-160VS
1 GND | GND 2
3 +5.6V | D+3.3V 4
5 +5.6V | D+3.3V 6
7 +5.6V | D+3.3V 8
9 +5.6V | GND 10
11 GND | GND 12
13 SBY+5.0V | SBY+3.3V 14
15 GND | GND 16
17 +16V | +10V 18
19 GND | SWiVEL_G 20
21 iRiN | MAiN_Y/V 22
23 iR_CA_BL_oUT | GND 24
25 iRoFF | MAiN_Y_E 26
27 HPDET | GND 28
29 FiN | MAiN_PB 30
31 RiN | GND 32
33 CPDET | MAiN_PR/C 34
35 SWVLDET | GND 36
37 GND | SUB_Y/V 38
39 AEP_R | GND 40
41 AEP_L | S/PDiT 42
43 GND | GND 44
45 ASP_R | SD_Yo 46
47 ASP_L | GND 48
49 GND | SD_Co 50
51 | GND 52
53 GND | FAN_EN 54
55 SEL_L_S | 56
57 SEL_R_S | GND 58
59 GND | 60
61 SCL1_3V_100 | 62
63 SDA1_3V_100 | GND 64
65 GND | 66
67 SCL_TU | 68
69 SDA_TU | GND 70
71 ANA_DIG | SEL_L_M 72
73 GND | SEL_R_M 74
75 IF_AGC | GND 76
77 GND | UATXD3 78
79 FDC_AGC | UARXD3 80
81 GND | GND 82
83 FAT_INP | SDA2_3V_100 84
85 GND | GND 86
87 GND | SCL2_3V_100 88
89 FAT_INN | GND 90
91 GND | TUNRST_N 92
93 FDC_INP | 94
95 GND | PoWER_2_Td 96
97 FDC_INN | 98
99 GND | GND 100
101 FS_OUTP | FAN_Cont 102
103 GND | 104
105 PoWERoFF | GND 106
107 GND | 108
109 FS_OUTN | 110
111 GND | STUNREQ0 112
113 GND | STUNREQ1 114
115 FAN_DET | GND 116
117 GND | 118
119 MTV_AFC | GND 120
121 SiG_DET | 122
123 | GND 124
125 PNLon | 126
127 GND | GND 128
129 REC_MUTE | 130
131 GND | GND 132
133 MPEGPSYNC | 134
135 MPEGPEN | GND 136
137 GND | AVCTXD 138
139 MPEGPD7 | AVCRXD 140
141 MPEGPD6 | AVCCTS_N 142
143 MPEGPD5 | AVCRTS_N 144
145 MPEGPD4 | GND 146
147 MPEGPD3 | CRX_iN 148
149 MPEGPD2 | DRX_iN 150
151 MPEGPD1 | 152
153 MPEGPD0 | 154
155 GND | 156
157 MPEGPCLK | 158
159 GND | 160
G1 GND
G2 GND
GND1
to sheet1.2.5 +5.6V
to sheet2.3.5 SBY+5.0V
+16V
CL11 10/10 2125
CL12 0.1/16 1005
CL13 0.1/25
TP011
to sheet3 iR_CA_BL_oUT
TP012
HP_D
to sheet5 FiN RiN CPDET SWVLDET
RL11 47
AEP_R AEP_L
1010
RL12 47
ASP_R ASP_L
1010
to sheet2
SEL_L_S SEL_R_S
(in this sheet) SCL1_3V_100 SDA1_3V_100
to sheet1
SCL_TU SDA_TU ANA_DIG IF_AGC FDC_AGC FAT_INP FAT_INN FDC_INP FDC_INN FS_OUTP
to sheet2 PoWERoFF
to sheet1 FS_OUTN
to sheet5 FAN_DET
to sheet1 MTV_AFC
to sheet2 SiG_DET
to sheet5 PNLon
to sheet2 REC_MUTE
TP006 TP009 TP010 TP013 TP014 TP015 TP016 TP017 TP018 TP019 TP020
SWiVEL_G to sheet5
D+3.3V to sheet3.5
CL21 0.1/16 1005
CL02 10/16 3216
SBY+3.3V to sheet3
CL22 0.1/16 1005
CL23 0.1/16 1005
+10V to sheet2.5
MAiN_Y/V MAiN_Y_E MAiN_PB MAiN_PR/C SUB_Y/V to sheet2
RL21 47 S/PDiT to sheet5
RL22 47 SD_Yo
RL23 47 SD_Co to sheet2
FAN_EN to sheet5
SEL_L_M SEL_R_M to sheet2
RL25 47
UATXD3 UARXD3 to sheet3
1010
SDA2_3V_100 SCL2_3V_100 to sheet5
TP025
PoWER_2_Td to sheet1.2
FAN_Cont to sheet5
TP004
TP023
TP024
AVCTXD AVCRXD AVCCTS_N AVCRTS_N to sheet3
TP021
TP022
I2C-bus Level Shift (3.3←→5V)
SW+5V
RL04 10k
1010
to sheet2
SDA1_5V_100 RL02 180
SCL1_5V_100 RL03 180
RL05 0
SCL1_3V_100
SDA1_3V_100
1010
D+3.3V
IL01 SN74CB3T3306DCU
1 1OE
2 1A
3 1B
4 GND
8 Vcc
7 2OE
6 2B
5 2A
CL01 0.1/16 1005
D+3.3V
RL01 4.7K
PoWER_2_Td
QL01 SRC1204EF
GND1

- All DC voltage to be measured with a tester (100 kΩ/V). Voltage taken on a complex color bar including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

BASIC CIRCUIT DIAGRAM

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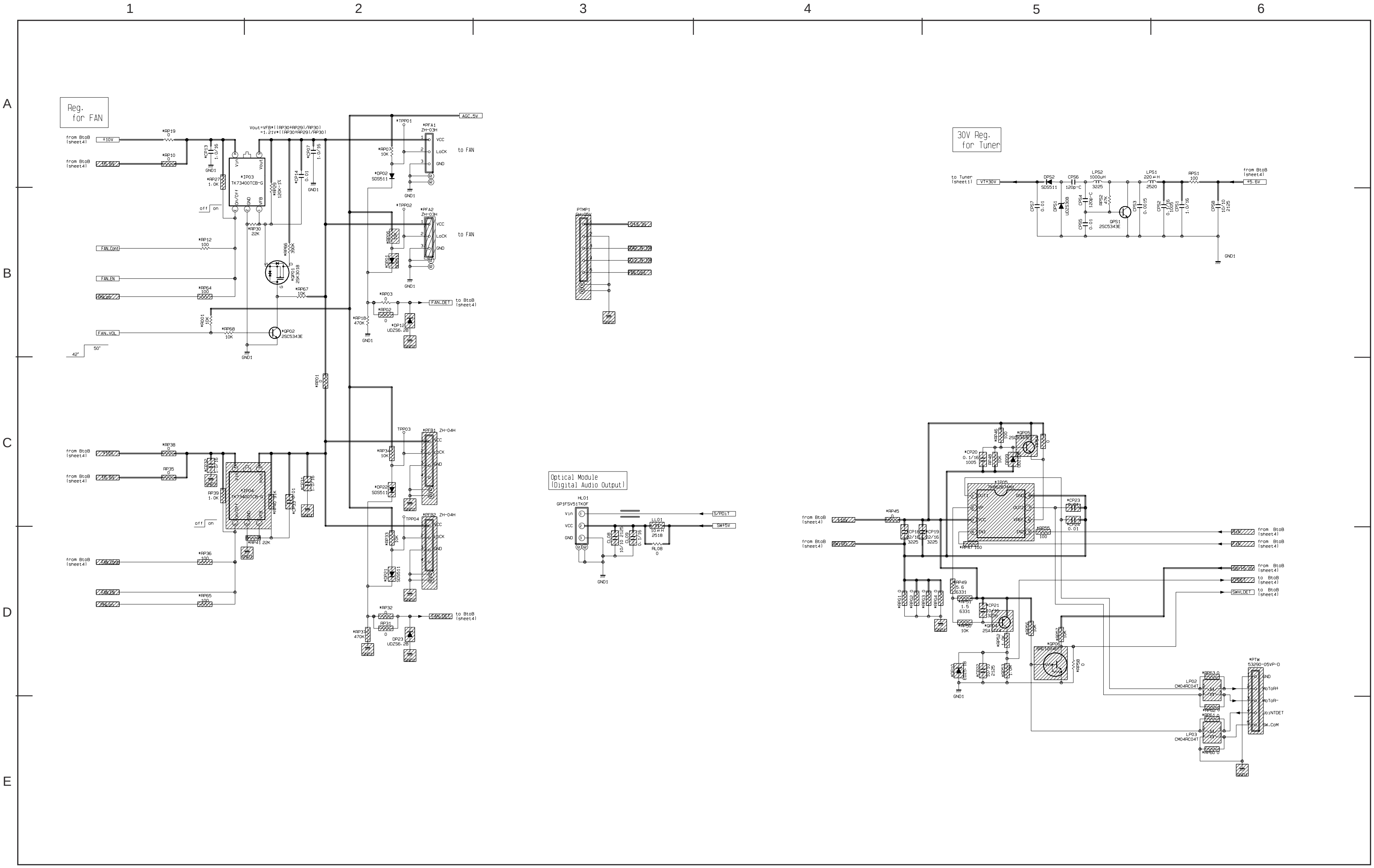
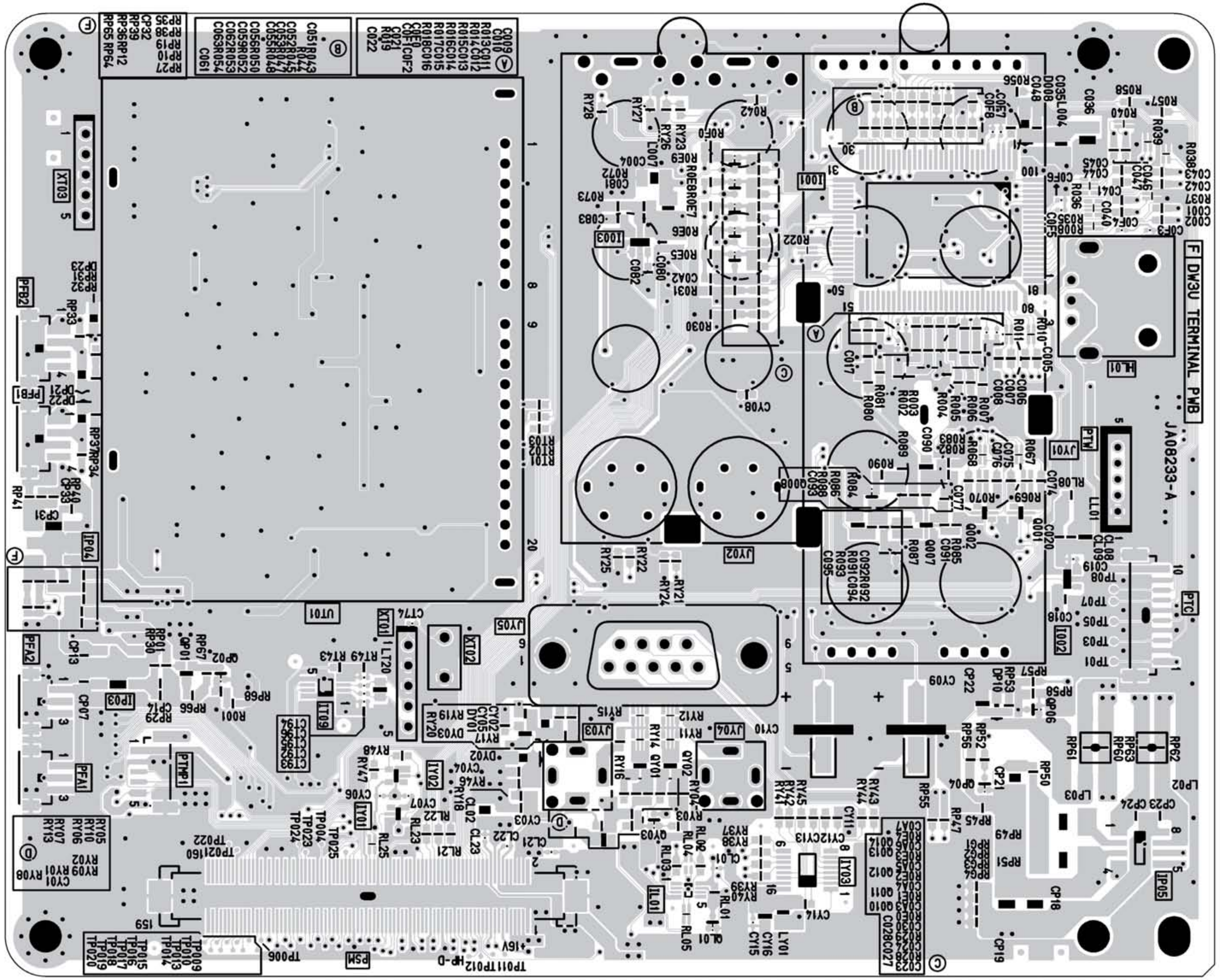

1
2
3
4
5
6
A
B
C
D
E
Reg. for FAN
from BtoB (sheet4)
+10V
AGC.5V
IP03
TK73400TCB-G
Vout=VFB•((RP30+RP29)/RP30)
=1.21V•((RP30+RP29)/RP30)
PFA1 ZH-03H
VCC
LoCK
GND
to FAN
PFA2 ZH-03H
FAN.Cont
FAN.EN
FAN.VOL
FAN.DET
to BtoB (sheet4)
QP02 2SC5343E
QP01 2SK3018
DP02 SDS511
DP12 UDZS6.2B
GND1
42"
50"
off on
IP04
TK73400TCB-G
PFB1 ZH-04H
PFB2 ZH-04H
DP23 UDZS6.2B
PTMP1
Optical Module (Digital Audio Output)
HL01
GP1FSV51TKOF
Vin
VCC
GND
S/PDIF
SW+5V
LL01
30V Reg. for Tuner
to Tuner (sheet1)
VT+30V
DPS2 SDS511
LPS2 1000uH
LPS1 220uH
RPS1 100
+5.6V
QPS1 2SC5343E
DPS1 UDZS30B
IP05
QP05
QP06
QP04
PTW 53290-05VP-D
GND
MoToR+
MoToR-
JoiNTDET
SW.CoM
LP02 CM04RC04T
LP03 CM04RC04T
SWVLDET
to BtoB (sheet4)

TERMINAL

- All DC voltage to be measured with a tester (100 kΩ/V). Voltage taken on a complex color bar including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

PRINTED CIRCUIT BOARDS

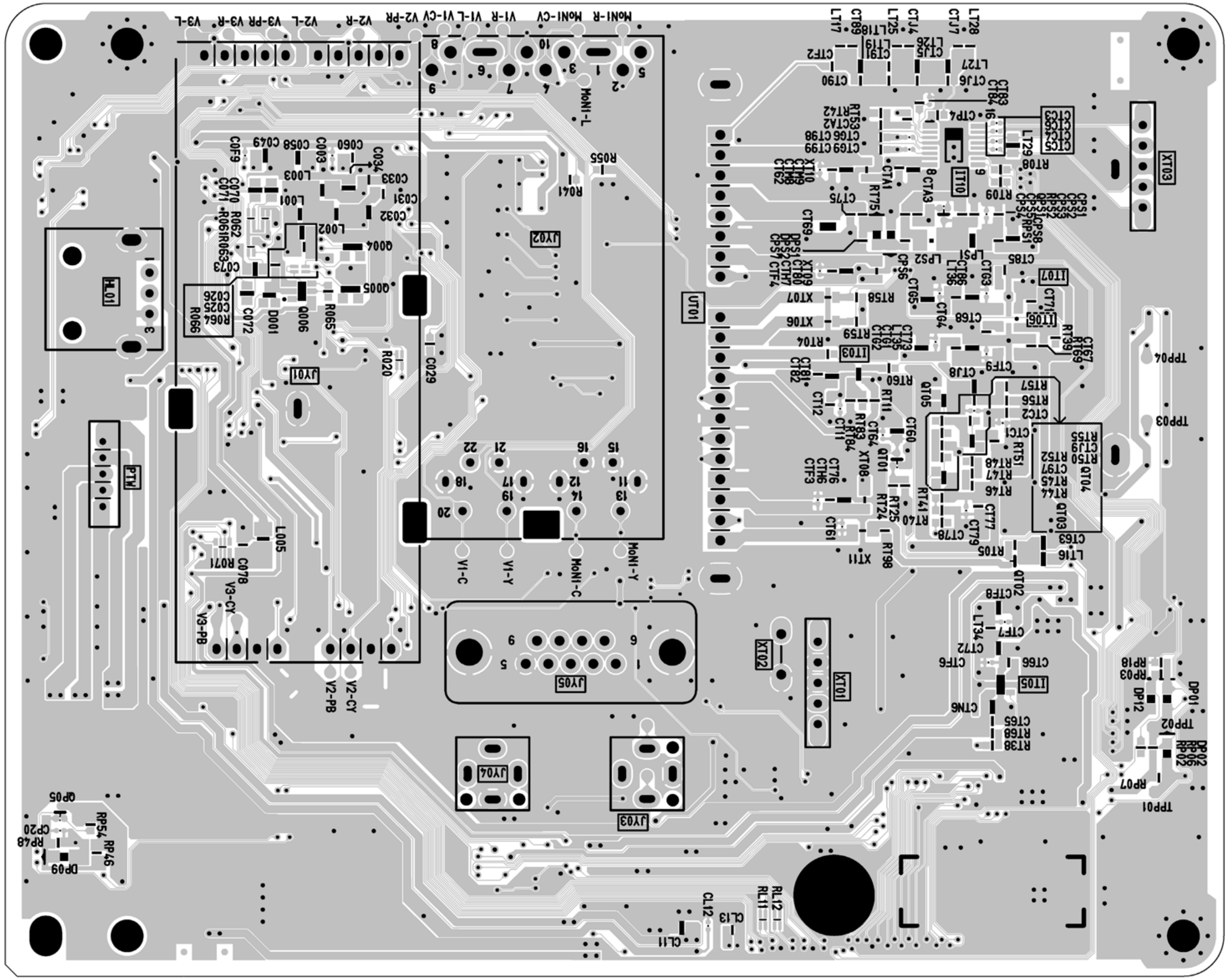
DW3-U TERMINAL PWB (Component side)



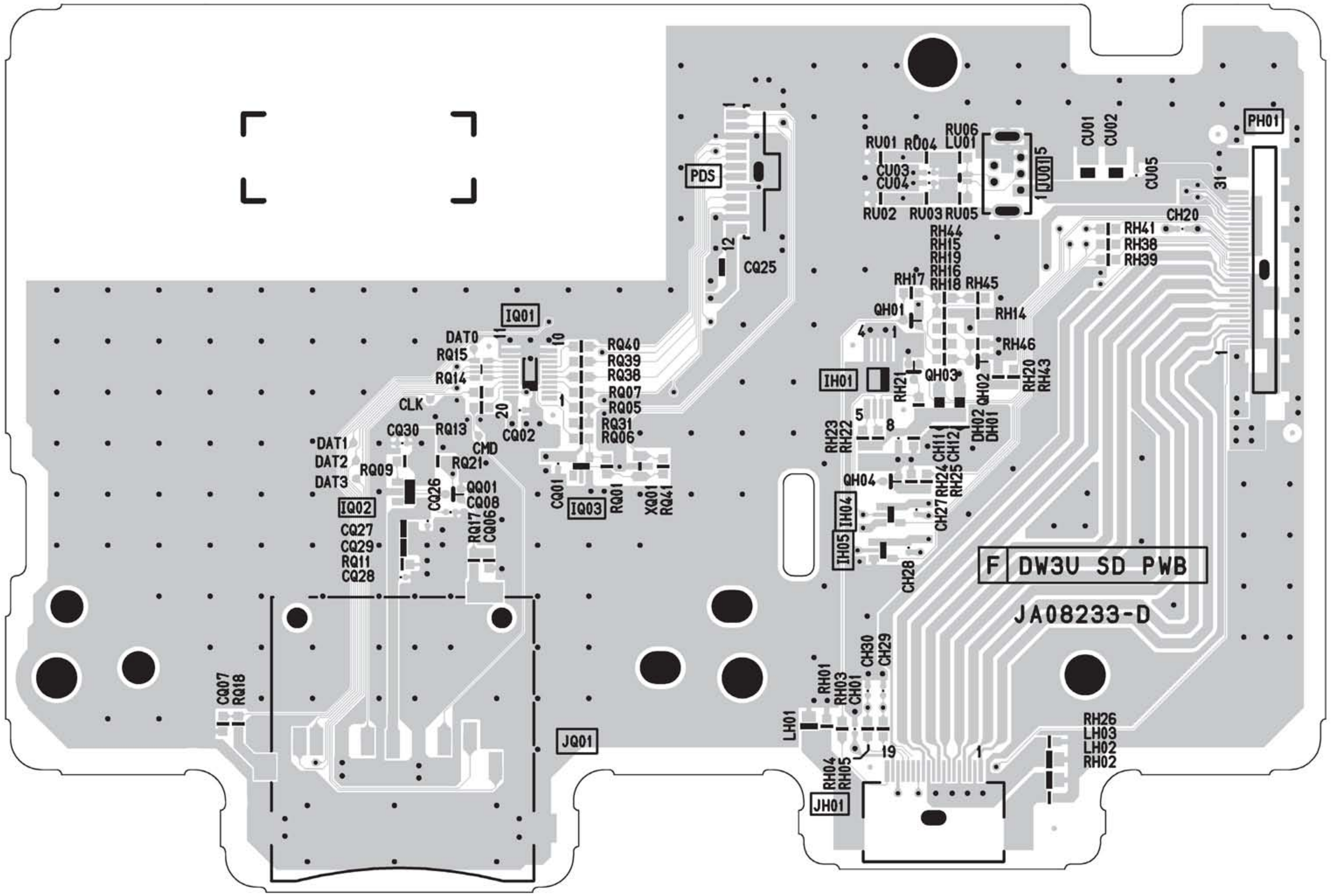
BACK TO TABLE OF CONTENTS

PRINTED CIRCUIT BOARDS

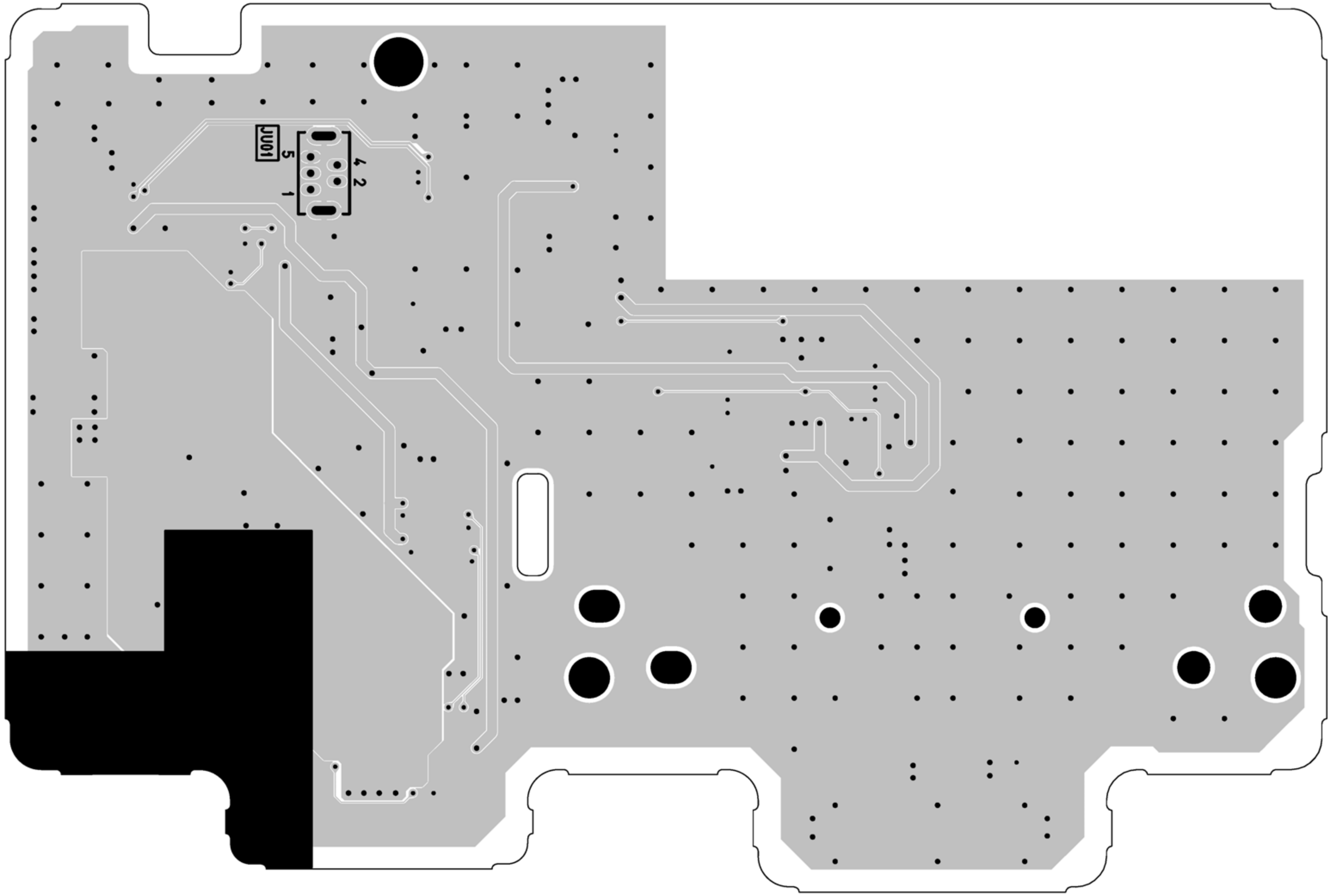
DW3-U TERMINAL PWB (Solder side)



DW3-U SD PWB (Component side)


PDS
CQ25
RU01 RU04 RU06 LU01
CU03
CU04
RU02 RU03 RU05
UU01
CU01 CU02
CU05
PH01
CH20
RH41
RH38
RH39
RH44
RH15
RH19
RH16
RH17 RH18 RH45
QH01
RH14
RH46
IH01
RH21
QH03
QH02
RH20
RH43
DH02
DH01
RH23
RH22
CH11
CH12
QH04
RH24
RH25
IH04
CH27
IH05
CH28
F DW3U SD PWB
JA08233-D
IQ01
DAT0
RQ15
RQ14
CLK
RQ40
RQ39
RQ38
RQ07
RQ05
RQ31
RQ06
CQ30
RQ13
CQ02
CMD
RQ21
DAT1
DAT2
DAT3
RQ09
CQ26
QQ01
CQ08
IQ02
RQ17
CQ06
CQ27
CQ29
RQ11
CQ28
CQ01
IQ03
RQ01
XQ01
RQ41
CQ07
RQ18
JQ01
RH01
RH03
CH01
CH30
CH29
LH01
RH04
RH05
JH01
RH26
LH03
LH02
RH02

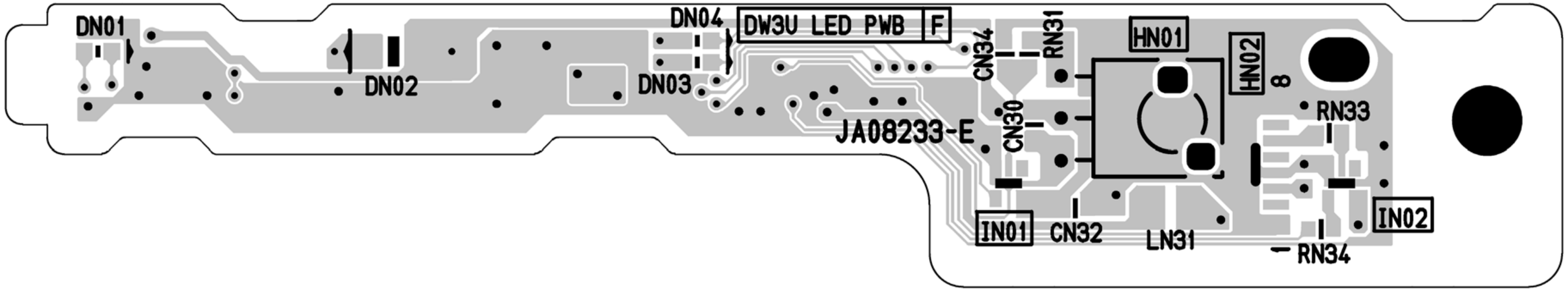
DW3-U SD PWB (Solder side)



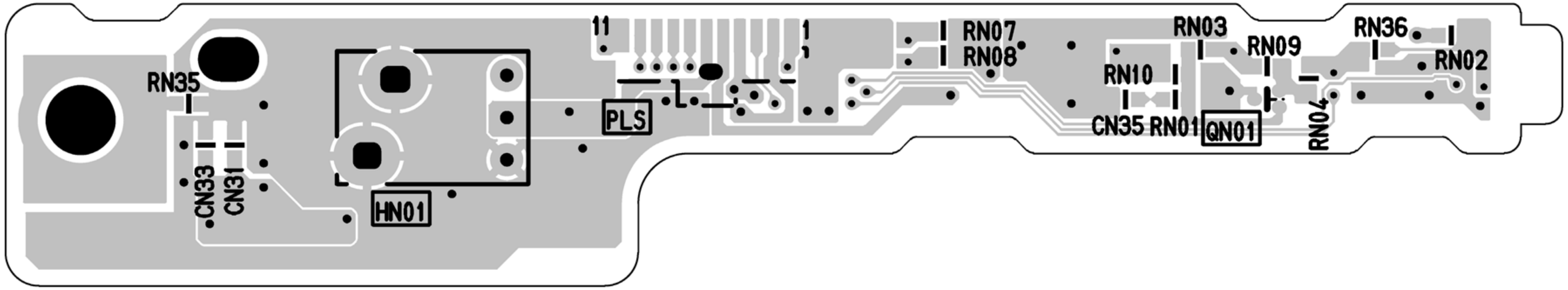
PRINTED CIRCUIT BOARDS

DW3-U LED PWB

(Component side)


DN01
DN02
DN04
DW3U LED PWB
F
DN03
CN34
RN31
HN01
HN02
8
RN33
JA08233-E
CN30
IN01
CN32
LN31
RN34
IN02

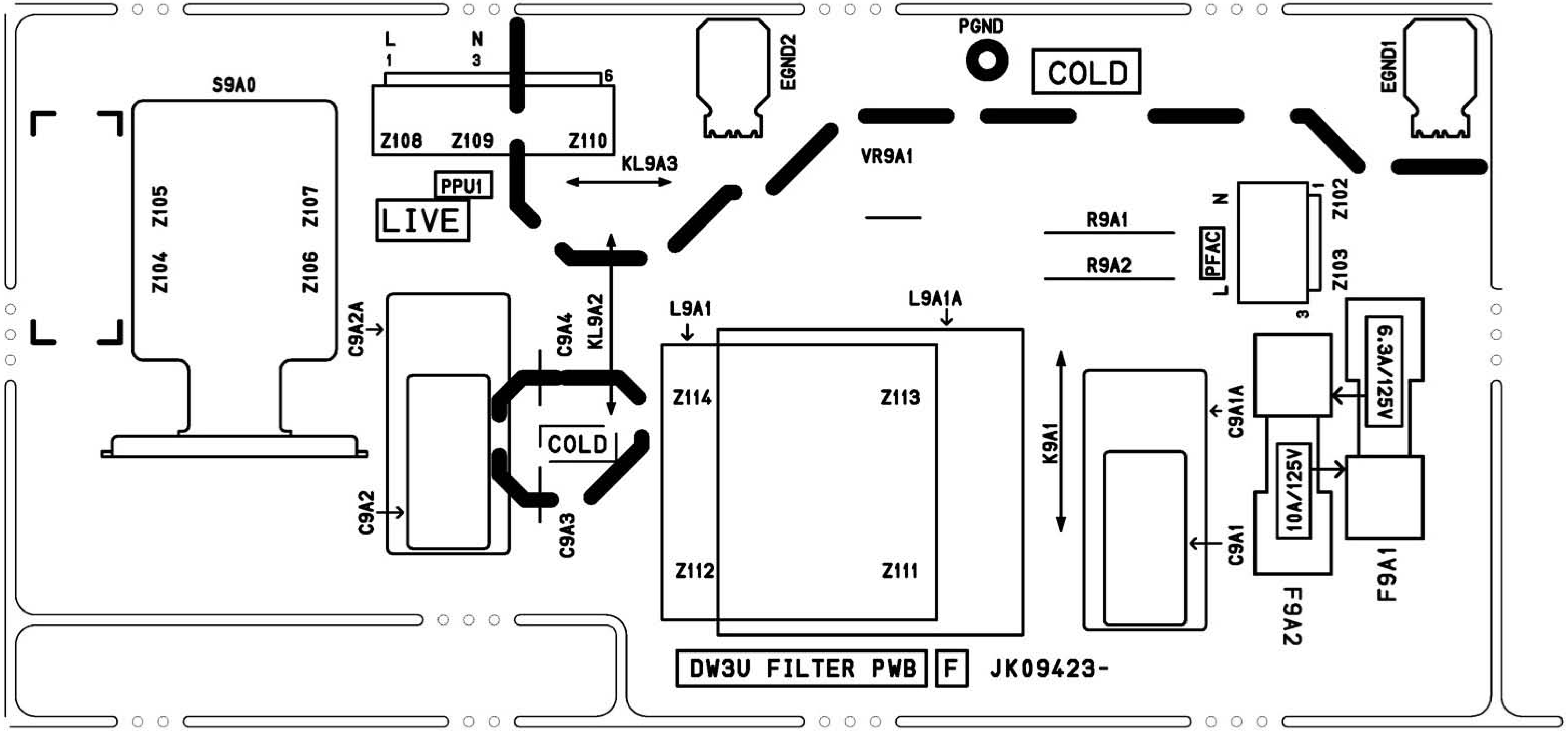
(Solder side)


11
1
RN07
RN08
RN03
RN09
RN36
RN02
RN35
PLS
RN10
CN35
RN01
QN01
RN04
CN33
CN31
HN01

PRINTED CIRCUIT BOARDS

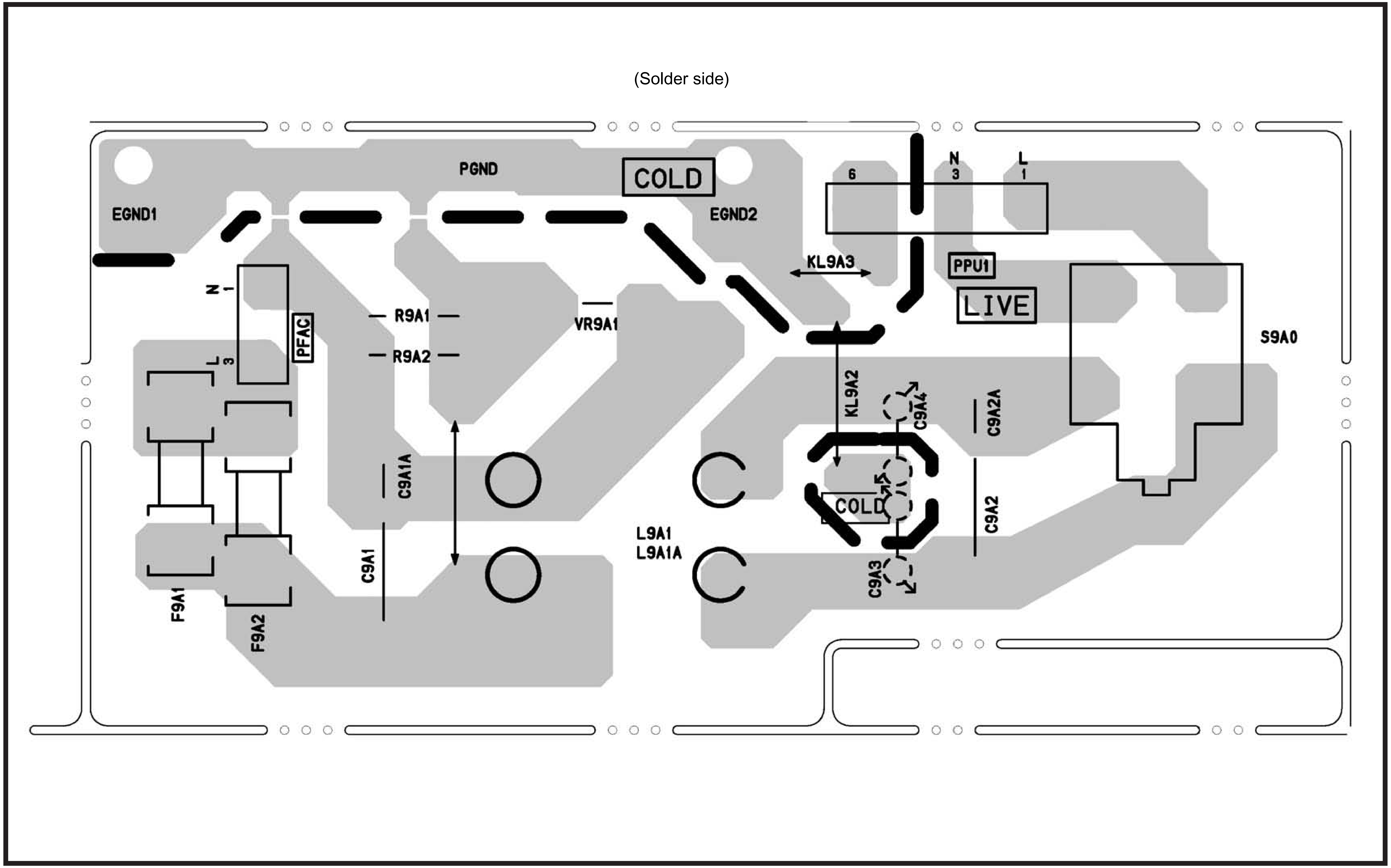
DW3-U FILTER PWB (Component side)

(Component side)


L
1
N
3
6
PGND
COLD
EGND2
EGND1
S9A0
Z108
Z109
Z110
KL9A3
VR9A1
PPU1
LIVE
Z105
Z107
Z104
Z106
R9A1
R9A2
PFAC
N
L
1
3
Z102
Z103
C9A2A
C9A4
KL9A2
L9A1
L9A1A
Z114
Z113
K9A1
C9A1A
6.3A/125V
10A/125V
COLD
C9A2
C9A3
Z112
Z111
C9A1
F9A2
F9A1
DW3U FILTER PWB
F
JK09423-

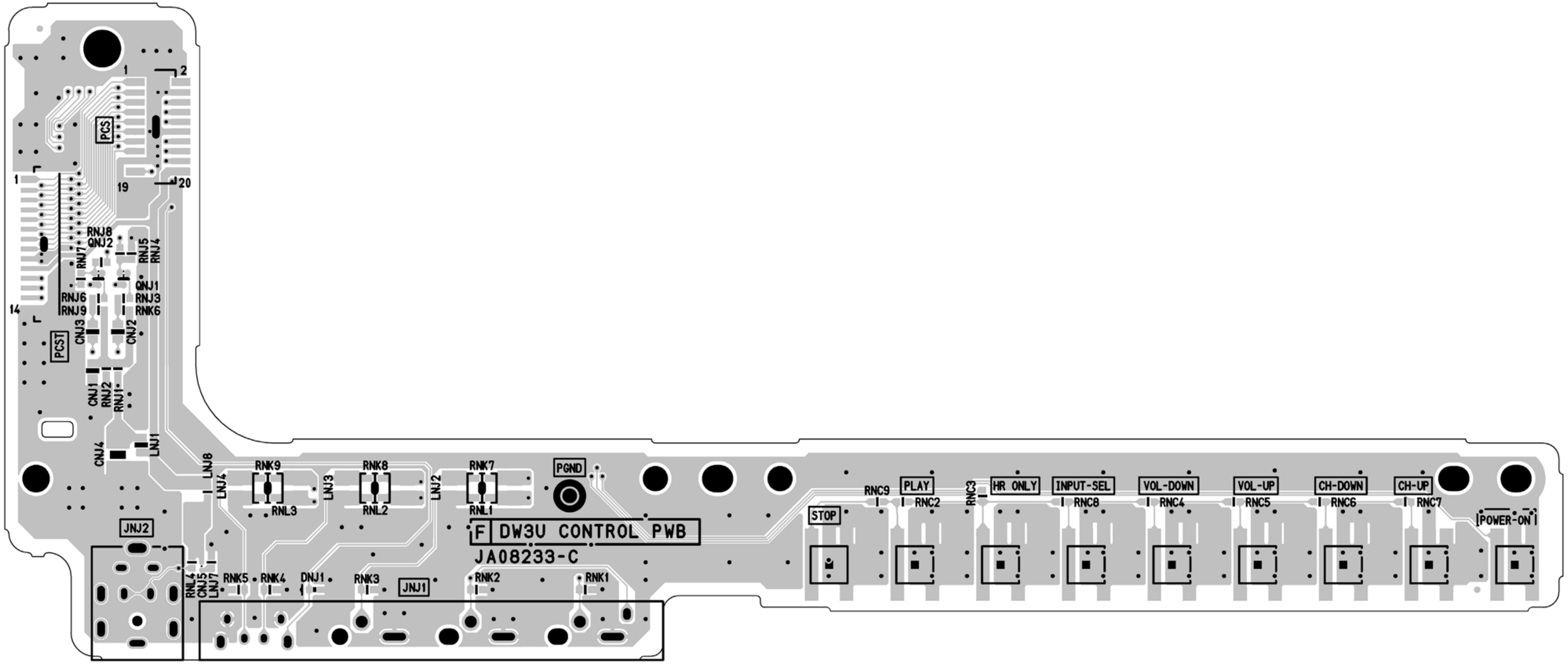
PRINTED CIRCUIT BOARDS

DW3-U FILTER PWB (Solder side)

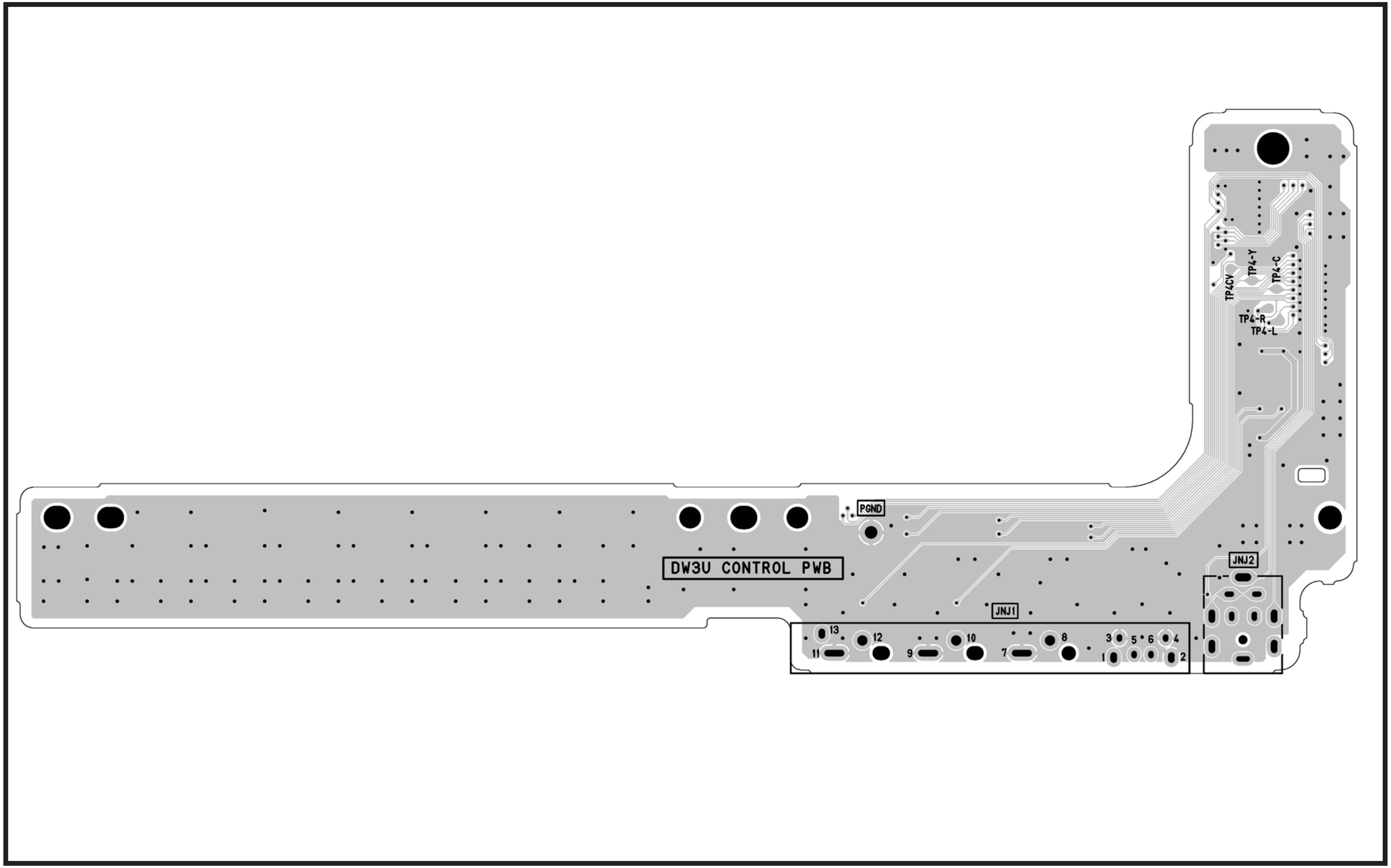

(Solder side)
PGND
COLD
EGND1
EGND2
6
N
3
L
1
KL9A3
PPU1
LIVE
S9A0
N
1
L
3
PFAC
R9A1
R9A2
VR9A1
KL9A2
C9A4
C9A2A
C9A1A
C9A1
L9A1
L9A1A
COLD
C9A3
C9A2
F9A1
F9A2

PRINTED CIRCUIT BOARDS

DW3-U CONTROL PWB (Component side)


1
2
PCS
19
20
1
14
RNJ8
QNJ2
RNJ7
RNJ5
RNJ4
QNJ1
RNJ3
RNK6
RNJ6
RNJ9
CNJ3
CNJ2
PCST
CNJ1
RNJ2
RNJ1
CNJ4
LNJ1
LNJ8
LNJ4
RNK9
RNL3
LNJ3
RNK8
RNL2
LNJ2
RNK7
RNL1
PGND
F DW3U CONTROL PWB
JA08233-C
JNJ2
RNL4
CNJ5
LNJ7
RNK5
RNK4
DNJ1
RNK3
JNJ1
RNK2
RNK1
RNC9
PLAY
RNC2
RNC3
HR ONLY
INPUT-SEL
RNC8
VOL-DOWN
RNC4
VOL-UP
RNC5
CH-DOWN
RNC6
CH-UP
RNC7
STOP
POWER-ON

DW3-U CONTROL PWB (Solder side)


TP4CV
TP4-Y
TP4-C
TP4-R
TP4-L
PGND
DW3U CONTROL PWB
JNJ2
JNJ1
13
12
10
8
3
5
6
4
11
9
7
1
2

REPLACEMENT PARTS LIST

PRODUCT SERVICE NOTE: Components marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully, the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

ABBREVIATIONS

Capacitors:
- AL: Aluminum Electrolytic
- CD: Ceramic Disc
- EL: Electrolitic
- PF: Polyester Film
- PP: Polypropylene
- PL: Plastic
- TA: Tantalum
- PR: Paper
- TM: Trimmer
- MC: Mylar

Resistors:
- CF: Carbon Film
- CC: Carbon Composition
- MF: Metal Oxide
- VR: Variable Resistor
- WW: Wire Wound
- FR: Fuse Resistor
- MG: Metal Grazed

Semiconductors:
- TR: Transistor
- DI: Diode
- ZD: Zener Diode
- VA: Varistor
- TH: Termistor
- IC: Integrated Circuit

SYMBOL	PART No.	DESCRIPTION	SYMBOL	PART No.	DESCRIPTION
			C035	AA01141R	CERAMIC CAPACITOR(0.1UF 16V)
		TERMINAL PWB	C036	AA01185R	CAP.CHIP-CERAMIC 22UF/16V B 32
	JP55123		C040	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
			C041	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
			C042	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
		CAPACITORS	C043	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
C001	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V	C044	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
C002	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V	C045	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
C003	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	C046	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
C004	AA00699R	CAP.CHIP-CERAMIC 10UFK 16V B 3	C047	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
C005	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V	C048	AA01115R	CAP.CHIP1608-B-4.7UF6.3V
C006	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V	C049	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
C007	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V	C051	AA01121R	CERAMIC CAPACITOR(0.47UF 10V)
C008	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V	C052	AA01343R	CERAMIC CAPACITOR(0.047UF 25V-
C009	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	C053	AA01121R	CERAMIC CAPACITOR(0.47UF 10V)
C010	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	C055	AA01121R	CERAMIC CAPACITOR(0.47UF 10V)
C011	AA01121R	CERAMIC CAPACITOR(0.47UF 10V)	C056	AA01121R	CERAMIC CAPACITOR(0.47UF 10V)
C012	AA01121R	CERAMIC CAPACITOR(0.47UF 10V)	C058	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
C013	AA01121R	CERAMIC CAPACITOR(0.47UF 10V)	C059	AA01121R	CERAMIC CAPACITOR(0.47UF 10V)
C014	AA01121R	CERAMIC CAPACITOR(0.47UF 10V)	C060	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
C015	AA01121R	CERAMIC CAPACITOR(0.47UF 10V)	C061	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
C016	AA01121R	CERAMIC CAPACITOR(0.47UF 10V)	C062	AA01121R	CERAMIC CAPACITOR(0.47UF 10V)
C017	AA01121R	CERAMIC CAPACITOR(0.47UF 10V)	C063	AA01121R	CERAMIC CAPACITOR(0.47UF 10V)
C018	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V	C070	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
C019	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	C071	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
C020	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V	C072	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
C021	AA01121R	CERAMIC CAPACITOR(0.47UF 10V)	C073	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
C022	AA01121R	CERAMIC CAPACITOR(0.47UF 10V)	C078	AA01141R	CERAMIC CAPACITOR(0.1UF 16V)
C023	0893188R	CERAMIC CAPACITOR(47000PF 16V)	C080	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
C024	AA01121R	CERAMIC CAPACITOR(0.47UF 10V)	C081	0893126R	CAP 1608CHIP 100PFJCH 50V TAPE
C025	AA01141R	CERAMIC CAPACITOR(0.1UF 16V)	C082	0893208R	CAP 1608CHIP 1000PFKB 50V TAPE
C026	AA00969R	CAP.CHIP2125-B-22UF6.3V	C083	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
C027	AA01121R	CERAMIC CAPACITOR(0.47UF 10V)	C090	AA00951R	CERAMIC CAPACITOR(1.0UF 16V)
C028	AA01343R	CERAMIC CAPACITOR(0.047UF 25V-	C091	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
C029	0893188R	CERAMIC CAPACITOR(47000PF 16V)	C092	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
C030	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V	C093	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
C031	AA01141R	CERAMIC CAPACITOR(0.1UF 16V)	C094	AA01113R	CCC225K06-B-16CT
C032	AA00969R	CAP.CHIP2125-B-22UF6.3V	C095	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
C033	AA01141R	CERAMIC CAPACITOR(0.1UF 16V)	C0A2	AA01141R	CERAMIC CAPACITOR(0.1UF 16V)
C034	AA00969R	CAP.CHIP2125-B-22UF6.3V	C0F0	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC

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SYMBOL	PART #	DESCRIPTION	SYMBOL	PART #	DESCRIPTION
C0F1	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CT95	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
C0F2	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CT96	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
C0F3	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CT97	0893222R	CAP 1608CHIP10000PFKB 50V TAPE
C0F4	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CTC1	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
C0F5	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CTC2	0893222R	CAP 1608CHIP10000PFKB 50V TAPE
C0F6	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CTF3	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
C0F7	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CTF4	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
C0F8	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CTF6	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
C0F9	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CTF7	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
CH01	0893348R	CCC103K25-B-10CT 1005-B-0.01UF	CTF8	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
CH11	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CTF9	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
CH12	AA01116R	CAP.CHIP1608-B-10UF 6.3V M	CTG1	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
CH20	0893348R	CCC103K25-B-10CT 1005-B-0.01UF	CTG2	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
CH27	AA01216R	CAP.CHIP-CERAMIC 1005B 1UF 6.3	CTG3	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
CH28	AA01216R	CAP.CHIP-CERAMIC 1005B 1UF 6.3	CTG4	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
CH29	CE00151R	EZJZ0V80010	CTG5	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
CH30	CE00151R	EZJZ0V80010	CTH6	0893222R	CAP 1608CHIP10000PFKB 50V TAPE
CL01	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CTH7	0893222R	CAP 1608CHIP10000PFKB 50V TAPE
CL02	AA00699R	CAP.CHIP-CERAMIC 10UFK 16V B 3	CTJ8	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
CL11	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK	CTM8	0893222R	CAP 1608CHIP10000PFKB 50V TAPE
CN30	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V	CTM9	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
CN32	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V	CTN6	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK
CNJ1	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK	CY02	0893126R	CAP 1608CHIP 100PFJCH 50V TAPE
CNJ2	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK	CY03	0893126R	CAP 1608CHIP 100PFJCH 50V TAPE
CNJ3	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK	CY04	0893126R	CAP 1608CHIP 100PFJCH 50V TAPE
CNJ4	AA00421R	CERAMIC CAPACITOR(10UF 16V)	CY05	0893126R	CAP 1608CHIP 100PFJCH 50V TAPE
CP07	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V	CY08	0893222R	CAP 1608CHIP10000PFKB 50V TAPE
CP13	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V	CY09	AD00433R	CEC471M10-EWCT
CP14	0893222R	CAP 1608CHIP10000PFKB 50V TAPE	CY10	AD00433R	CEC471M10-EWCT
CPS1	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V	CY11	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
CPS2	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	CY12	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
CPS3	0893211R	CAP 1608CHIP 1500PFKB 50V TAPE	CY13	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
CPS4	0893127R	CAP 1608CHIP 120PFJCH 50V TAPE	CY14	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V
CPS5	0893222R	CAP 1608CHIP10000PFKB 50V TAPE	CY15	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC
CPS6	0893127R	CAP 1608CHIP 120PFJCH 50V TAPE	CY16	AA00966R	CERAMIC CAPACITOR(4.7UF 6.3V)
CPS7	0893222R	CAP 1608CHIP10000PFKB 50V TAPE			
CPS8	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK			**DIODES**
CQ01	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	D001	CC01921R	SDS142WKF_PF
CQ02	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	DH01	CC01891R	SDS511_PF
CQ06	0790039R	RES.CHIP 1/16W 1.5K OHM	DH02	CC01891R	SDS511_PF
CQ07	0893208R	CAP 1608CHIP 1000PFKB 50V TAPE	DN01	CC01871R	LIGHT EMITTING DIODE
CQ08	0893348R	CCC103K25-B-10CT 1005-B-0.01UF	DN02	CC01863R	LIGHT EMITTING DIODE (SML012BC4T)
CQ25	AA00969R	CAP.CHIP2125-B-22UF6.3V	DN03	CC01872R	LIGHT EMITTING DIODE
CQ26	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	DP02	CC01891R	SDS511_PF
CQ27	AA00969R	CAP.CHIP2125-B-22UF6.3V	DPS1	CC02022R	ZENER.CHIP UDZSTE-1730B
CQ28	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	DPS2	CC01891R	SDS511_PF
CQ29	AA00969R	CAP.CHIP2125-B-22UF6.3V	DY01	CC01999R	ZENER.CHIP UDZSTE-174.3B
CQ30	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	DY02	CC01999R	ZENER.CHIP UDZSTE-174.3B
CT11	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC			
CT12	0893222R	CAP 1608CHIP10000PFKB 50V TAPE			**MODULES**
CT60	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK	HL01	CZ01391	ANALOG MONOLITHIC IC (GP1FSV51TK0F)
CT61	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	HN01	CZ01371U	INFRARED DETECTING UNIT(GP1UE281RK0VF)
CT62	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC			
CT63	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK			**INTEGRATED CIRCUITS (IC's)**
CT64	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	I001	CK53531U	R2S11008FP
CT65	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V	I002	CK37218R	MONO IC TK11150CSCL
CT66	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V	I003	CK51331R	TK11100CS
CT67	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V	IH01	CK53582R	S-24CS02AFT-TB-G
CT68	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V	IH04	CK38329R	DIGITAL MONOLITHIC IC (SN74LVC
CT69	AA01173R	CCC1R0K50-B-32CT 1UF/50V-B-3225	IH05	CK38329R	DIGITAL MONOLITHIC IC (SN74LVC
CT71	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V	IL01	CK50961R	SN74CB3T3306DCUR
CT72	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK	IN01	CK55475R	1GATE LOGIC IC (TC7SZ14FU)
CT73	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK	IP03	CK52481R	TK73400TCB-G
CT74	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	IQ01	CK53741R	TC7MBL3245AFK
CT75	0893222R	CAP 1608CHIP10000PFKB 50V TAPE	IQ02	CK37216R	MONO IC TK11133CSCL
CT76	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK	IQ03	CK55511R	1G LOGIC IC (TC7SG17FU)
CT77	0893208R	CAP 1608CHIP 1000PFKB 50V TAPE	IT03	CK53612R	TC7PA53FU
CT78	0893222R	CAP 1608CHIP10000PFKB 50V TAPE	IT05	CK37218R	MONO IC TK11150CSCL
CT79	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC	IT06	CK37605R	IC TK11250CM
CT80	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK	IT07	CK37605R	IC TK11250CM
CT81	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK	IT09	CK51152R	UPC3231GV
CT85	AA01144R	CERAMIC CAP. 1608-B 1.0UF 16V	IY03	CK50027R	DIGITAL MONOLITHIC IC (MAX202I
CT86	AA00937R	CAP.CHIP-CERAMIC 10UF 10V 2012BK			
CT92	AA01231R	0.1UF 16V 1005-B CERAMIC CAPAC			**COILS**
CT93	0893222R	CAP 1608CHIP10000PFKB 50V TAPE	L001	BA00887R	LBC2518 CHIP COIL 10UH

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SYMBOL	PART #	DESCRIPTION	SYMBOL	PART #	DESCRIPTION
L002	BA00887R	LBC2518 CHIP COIL 10UH	R041	AQ00164R	CHIP RESITOR 1/16W 75OHM TAPE
L003	BA00887R	LBC2518 CHIP COIL 10UH	R042	AQ00164R	CHIP RESITOR 1/16W 75OHM TAPE
L004	BA00887R	LBC2518 CHIP COIL 10UH	R043	0790024R	RES.CHIP 1/16W 100 OHM
L005	BA00887R	LBC2518 CHIP COIL 10UH	R044	0790037R	RES.CHIP 1/16W 1.0K OHM
L007	BA00887R	LBC2518 CHIP COIL 10UH	R045	0790024R	RES.CHIP 1/16W 100 OHM
LNJ1	BA02646R	LBR2012 CHIP INDUCTOR 47UH	R047	0790024R	RES.CHIP 1/16W 100 OHM
LNJ2	BM00241R	CHOKE COIL-CHIP (TYPE RC04)	R048	0790024R	RES.CHIP 1/16W 100 OHM
LPS1	BA02185R	HCC221J2520CT	R050	0790024R	RES.CHIP 1/16W 100 OHM
LPS2	BA02244R	HCC102J32CT	R052	0790024R	RES.CHIP 1/16W 100 OHM
LT16	BM00151R	FILTER BLM21P300SPT	R053	0790024R	RES.CHIP 1/16W 100 OHM
LT20	BA01127R	MLF2012 CHIP INDUCTOR 1.8UH	R054	0790024R	RES.CHIP 1/16W 100 OHM
LT34	BM10348R	CHIP FERRITE BEAD BLM18PG121SN	R055	AQ00164R	CHIP RESITOR 1/16W 75OHM TAPE
LT35	BM10348R	CHIP FERRITE BEAD BLM18PG121SN	R056	AQ00164R	CHIP RESITOR 1/16W 75OHM TAPE
LT36	BM10348R	CHIP FERRITE BEAD BLM18PG121SN	R058	AQ00164R	CHIP RESITOR 1/16W 75OHM TAPE
LY01	BA00894R	LBC2518 CHIP COIL 100UH	R061	AQ03317R	RES.CHIP 1/16W 1KOHM
			R062	AQ03343R	RES.CHIP 1/16W 82KOHM
		TRANSISTORS	R063	AQ03308R	RES.CHIP 1/16W 220OHM
Q002	CA02162R	SUT487J	R064	AQ03331R	RES.CHIP 1/16W 10KOHM
Q004	CA03271R	SMD TRS 2SD2704K	R065	0790051R	RES.CHIP 1/16W 10K OHM
Q005	CA03271R	SMD TRS 2SD2704K	R066	0790073R	RES.CHIP 1/16W 470K OHM
Q006	CA01181R	D-TRS.CHIP IMD10A	R068	AQ03317R	RES.CHIP 1/16W 1KOHM
Q007	CA02162R	SUT487J	R071	AQ00544R	CHIP RESISTOR 3.3KOHM
Q008	CA14091R	PHOTO TRANSISTOR	R072	AQ00266R	RES.CHIP 1/16W 510K OHM TAPE
Q010	1323294R	TRS.CHIP 2SA1774 TL (R/S)	R073	AQ00245R	RES.CHIP 1/16W 82K OHM TAPE
Q011	1323294R	TRS.CHIP 2SA1774 TL (R/S)	R080	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
Q012	1323294R	TRS.CHIP 2SA1774 TL (R/S)	R082	0790059R	RES.CHIP 1/16W 47K OHM
Q013	1323294R	TRS.CHIP 2SA1774 TL (R/S)	R083	0790059R	RES.CHIP 1/16W 47K OHM
Q014	1323294R	TRS.CHIP 2SA1774 TL (R/S)	R084	0790051R	RES.CHIP 1/16W 10K OHM
QH01	1323293R	TRS.CHIP 2SC4617 TL (R/S)	R085	0790064R	RES.CHIP 1/16W 100K OHM
QH02	1323293R	TRS.CHIP 2SC4617 TL (R/S)	R086	0790037R	RES.CHIP 1/16W 1.0K OHM
QH03	CA02092R	SRC1202EF	R087	0790064R	RES.CHIP 1/16W 100K OHM
QH04	1323293R	TRS.CHIP 2SC4617 TL (R/S)	R088	0790064R	RES.CHIP 1/16W 100K OHM
QL01	CA02091R	SRC1204EF_PF	R089	0790064R	RES.CHIP 1/16W 100K OHM
QNJ1	CA14091R	PHOTO TRANSISTOR	R090	0790051R	RES.CHIP 1/16W 10K OHM
QNJ2	CA14091R	PHOTO TRANSISTOR	R091	0790051R	RES.CHIP 1/16W 10K OHM
QP01	CA01011R	TRS.CHIP 2SK3018	R092	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
QP02	CA14091R	PHOTO TRANSISTOR	R093	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
QPS1	CA14091R	PHOTO TRANSISTOR	R0E0	0790015R	RES.CHIP 1/16W 22 OHM
QQ01	CA02091R	SRC1204EF_PF	R0E1	0790015R	RES.CHIP 1/16W 22 OHM
QT01	CA14091R	PHOTO TRANSISTOR	R0E2	0790015R	RES.CHIP 1/16W 22 OHM
QT02	CA14091R	PHOTO TRANSISTOR	R0E3	0790015R	RES.CHIP 1/16W 22 OHM
QT03	CA02171R	TRS.CHIP 2SC4082T106P	R0E4	0790015R	RES.CHIP 1/16W 22 OHM
QT04	CA02171R	TRS.CHIP 2SC4082T106P	R0E5	0790037R	RES.CHIP 1/16W 1.0K OHM
QT05	CA02171R	TRS.CHIP 2SC4082T106P	R0E6	0790037R	RES.CHIP 1/16W 1.0K OHM
			R0E7	0790037R	RES.CHIP 1/16W 1.0K OHM
		RESISTORS	R0E8	0790037R	RES.CHIP 1/16W 1.0K OHM
R001	0790051R	RES.CHIP 1/16W 10K OHM	R0E9	0790037R	RES.CHIP 1/16W 1.0K OHM
R002	AQ00164R	CHIP RESITOR 1/16W 75OHM TAPE	R0F0	0790037R	RES.CHIP 1/16W 1.0K OHM
R003	AQ00164R	CHIP RESITOR 1/16W 75OHM TAPE	RH01	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
R004	AQ00164R	CHIP RESITOR 1/16W 75OHM TAPE	RH02	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
R005	AQ00164R	CHIP RESITOR 1/16W 75OHM TAPE	RH03	0790024R	RES.CHIP 1/16W 100 OHM
R006	AQ00164R	CHIP RESITOR 1/16W 75OHM TAPE	RH04	0790024R	RES.CHIP 1/16W 100 OHM
R007	AQ00164R	CHIP RESITOR 1/16W 75OHM TAPE	RH05	0790024R	RES.CHIP 1/16W 100 OHM
R008	AQ03317R	RES.CHIP 1/16W 1KOHM	RH14	0790064R	RES.CHIP 1/16W 100K OHM
R010	AQ03317R	RES.CHIP 1/16W 1KOHM	RH15	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
R011	AQ03317R	RES.CHIP 1/16W 1KOHM	RH17	0790037R	RES.CHIP 1/16W 1.0K OHM
R013	0790024R	RES.CHIP 1/16W 100 OHM	RH18	0790024R	RES.CHIP 1/16W 100 OHM
R014	0790024R	RES.CHIP 1/16W 100 OHM	RH19	0790051R	RES.CHIP 1/16W 10K OHM
R015	0790024R	RES.CHIP 1/16W 100 OHM	RH20	0790051R	RES.CHIP 1/16W 10K OHM
R016	0790024R	RES.CHIP 1/16W 100 OHM	RH21	0790051R	RES.CHIP 1/16W 10K OHM
R017	0790024R	RES.CHIP 1/16W 100 OHM	RH22	0790059R	RES.CHIP 1/16W 47K OHM
R018	0790024R	RES.CHIP 1/16W 100 OHM	RH23	0790059R	RES.CHIP 1/16W 47K OHM
R019	0790024R	RES.CHIP 1/16W 100 OHM	RH24	0790046R	RES.CHIP 1/16W 4.7K OHM
R020	AQ03317R	RES.CHIP 1/16W 1KOHM	RH25	0790046R	RES.CHIP 1/16W 4.7K OHM
R022	AQ03361R	RES.CHIP 1/16W 0OHM	RH26	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
R028	0790024R	RES.CHIP 1/16W 100 OHM	RH38	0790024R	RES.CHIP 1/16W 100 OHM
R029	0790024R	RES.CHIP 1/16W 100 OHM	RH39	0790024R	RES.CHIP 1/16W 100 OHM
R030	0790051R	RES.CHIP 1/16W 10K OHM	RH41	0790024R	RES.CHIP 1/16W 100 OHM
R031	0790051R	RES.CHIP 1/16W 10K OHM	RH43	0790051R	RES.CHIP 1/16W 10K OHM
R035	AQ00537R	4-NETWORKED CHIP RESISTOR 1.0K	RH44	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
R036	AQ00537R	4-NETWORKED CHIP RESISTOR 1.0K	RL01	0790046R	RES.CHIP 1/16W 4.7K OHM
R037	AQ03344R	RES.CHIP 1/16W 100KOHM	RL02	0790027R	RES.CHIP 1/16W 180 OHM
R038	AQ03344R	RES.CHIP 1/16W 100KOHM	RL03	0790027R	RES.CHIP 1/16W 180 OHM
R039	AQ03344R	RES.CHIP 1/16W 100KOHM	RL04	AQ03331R	RES.CHIP 1/16W 10KOHM
R040	AQ03344R	RES.CHIP 1/16W 100KOHM	RL05	AQ03361R	RES.CHIP 1/16W 0OHM

PRODUCT SERVICE NOTE: Components marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully, the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

SYMBOL	PART #	DESCRIPTION	SYMBOL	PART #	DESCRIPTION
RL08	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RT43	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
RL11	AQ03299R	RES.CHIP 1/16W 47OHM	RT44	AQ00164R	CHIP RESITOR 1/16W 75OHM TAPE
RL12	AQ03299R	RES.CHIP 1/16W 47OHM	RT45	0790043R	RES.CHIP 1/16W 2.7K OHM
RL21	0790019R	RES.CHIP 1/16W 47 OHM	RT46	AQ00258R	RES.CHIP 1/16W 270K OHM TAPE
RL22	0790019R	RES.CHIP 1/16W 47 OHM	RT47	AQ00247R	RES.CHIP 1/16W 100K OHM TAPE
RL23	0790019R	RES.CHIP 1/16W 47 OHM	RT48	AQ00229R	RES.CHIP 1/16W 22K OHM TAPE
RL25	AQ03299R	RES.CHIP 1/16W 47OHM	RT50	0790046R	RES.CHIP 1/16W 4.7K OHM
RN02	0790039R	RES.CHIP 1/16W 1.5K OHM	RT51	0790037R	RES.CHIP 1/16W 1.0K OHM
RN03	0790029R	RES.CHIP 1/16W 270 OHM	RT52	0790046R	RES.CHIP 1/16W 4.7K OHM
RN08	0790034R	RES.CHIP 1/16W 560 OHM	RT55	0790052R	RES.CHIP 1/16W 12K OHM
RN31	0790024R	RES.CHIP 1/16W 100 OHM	RT56	AQ00212R	RES.CHIP 1/16W 4.7K OHM TAPE
RN36	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RT57	AQ00244R	RES.CHIP 1/16W 75K OHM TAPE
RNC3	0790037R	RES.CHIP 1/16W 1.0K OHM	RT58	0790046R	RES.CHIP 1/16W 4.7K OHM
RNC4	0790046R	RES.CHIP 1/16W 4.7K OHM	RT59	0790046R	RES.CHIP 1/16W 4.7K OHM
RNC5	0790043R	RES.CHIP 1/16W 2.7K OHM	RT60	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
RNC6	0790039R	RES.CHIP 1/16W 1.5K OHM	RT75	0790043R	RES.CHIP 1/16W 2.7K OHM
RNC7	0790037R	RES.CHIP 1/16W 1.0K OHM	RT83	0790052R	RES.CHIP 1/16W 12K OHM
RNC8	0790051R	RES.CHIP 1/16W 10K OHM	RT84	0790064R	RES.CHIP 1/16W 100K OHM
RNJ1	0790044R	RES.CHIP 1/16W 3.3K OHM	RT98	0790055R	RES.CHIP 1/16W 22K OHM
RNJ2	0790042R	RES.CHIP 1/16W 2.2K OHM	RY17	0790028R	RES.CHIP 1/16W 220 OHM
RNJ3	0790037R	RES.CHIP 1/16W 1.0K OHM	RY18	0790028R	RES.CHIP 1/16W 220 OHM
RNJ4	0790037R	RES.CHIP 1/16W 1.0K OHM	RY19	0790028R	RES.CHIP 1/16W 220 OHM
RNJ5	0790024R	RES.CHIP 1/16W 100 OHM	RY20	0790028R	RES.CHIP 1/16W 220 OHM
RNJ6	0790037R	RES.CHIP 1/16W 1.0K OHM	RY21	AQ00163R	RES.CHIP 1/16W 68 OHM TAPE
RNJ7	0790037R	RES.CHIP 1/16W 1.0K OHM	RY22	AQ00163R	RES.CHIP 1/16W 68 OHM TAPE
RNJ8	0790024R	RES.CHIP 1/16W 100 OHM	RY23	AQ00163R	RES.CHIP 1/16W 68 OHM TAPE
RNJ9	0790061R	RES.CHIP 1/16W 56K OHM	RY24	0790064R	RES.CHIP 1/16W 100K OHM
RNK1	0790069R	RES.CHIP 1/16W 270K OHM	RY25	0790064R	RES.CHIP 1/16W 100K OHM
RNK2	0790069R	RES.CHIP 1/16W 270K OHM	RY26	0790064R	RES.CHIP 1/16W 100K OHM
RNK6	0790061R	RES.CHIP 1/16W 56K OHM	RY27	0790064R	RES.CHIP 1/16W 100K OHM
RNK8	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RY28	0790064R	RES.CHIP 1/16W 100K OHM
RNK9	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RY37	0790037R	RES.CHIP 1/16W 1.0K OHM
RNL2	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RY38	0790037R	RES.CHIP 1/16W 1.0K OHM
RNL3	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RY39	0790037R	RES.CHIP 1/16W 1.0K OHM
RP03	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RY40	0790037R	RES.CHIP 1/16W 1.0K OHM
RP07	0790051R	RES.CHIP 1/16W 10K OHM	RY41	0790037R	RES.CHIP 1/16W 1.0K OHM
RP12	0790024R	RES.CHIP 1/16W 100 OHM	RY42	0790037R	RES.CHIP 1/16W 1.0K OHM
RP18	0790073R	RES.CHIP 1/16W 470K OHM	RY43	0790037R	RES.CHIP 1/16W 1.0K OHM
RP19	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RY44	0790037R	RES.CHIP 1/16W 1.0K OHM
RP29	AQ00249R	RES.CHIP 1/16W 120K OHM TAPE	RY45	0790037R	RES.CHIP 1/16W 1.0K OHM
RP30	0790055R	RES.CHIP 1/16W 22K OHM	RY46	0790056R	RES.CHIP 1/16W 27K OHM
RP58	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	RY47	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
RP66	0790072R	RES.CHIP 1/16W 390K OHM	RY48	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608
RP67	0790051R	RES.CHIP 1/16W 10K OHM			
RP68	0790051R	RES.CHIP 1/16W 10K OHM			**SWITCHES**
RPS1	0790024R	RES.CHIP 1/16W 100 OHM	SNC1	FB00021R	CHIP PUSH SWITCH
RPS2	0790059R	RES.CHIP 1/16W 47K OHM	SNC2	FB00021R	CHIP PUSH SWITCH
RQ05	0790019R	RES.CHIP 1/16W 47 OHM	SNC3	FB00021R	CHIP PUSH SWITCH
RQ06	0790019R	RES.CHIP 1/16W 47 OHM	SNC4	FB00021R	CHIP PUSH SWITCH
RQ07	0790019R	RES.CHIP 1/16W 47 OHM	SNC5	FB00021R	CHIP PUSH SWITCH
RQ09	0790051R	RES.CHIP 1/16W 10K OHM	SNC6	FB00021R	CHIP PUSH SWITCH
RQ11	0790061R	RES.CHIP 1/16W 56K OHM	SNC7	FB00021R	CHIP PUSH SWITCH
RQ13	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608			
RQ14	0790015R	RES.CHIP 1/16W 22 OHM			**CRYSTALS, FILTERS**
RQ15	AQ00501R	CHIP RESISTOR 0OHM	XT01	BG01624U	SAW FILTER(X6875D)
RQ17	0790019R	RES.CHIP 1/16W 47 OHM	XT02	BN00261	BGS TRAP MKTGA47M2CAHP00B05
RQ18	0790019R	RES.CHIP 1/16W 47 OHM	XT06	BK00199R	CERAMIC FILTER 2012TYPE
RQ21	0790038R	RES.CHIP 1/16W 1.2K OHM	XT07	BK00199R	CERAMIC FILTER 2012TYPE
RQ31	0790046R	RES.CHIP 1/16W 4.7K OHM	XT08	AZ01102R	NOISE FILTER SGM20F1C104-4A
RQ38	0790019R	RES.CHIP 1/16W 47 OHM	XT09	AZ01102R	NOISE FILTER SGM20F1C104-4A
RQ39	0790019R	RES.CHIP 1/16W 47 OHM	XT10	AZ01102R	NOISE FILTER SGM20F1C104-4A
RQ40	0790019R	RES.CHIP 1/16W 47 OHM	XT11	AZ01102R	NOISE FILTER SGM20F1C104-4A
RQ41	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608			
RT01	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608			**CONNECTORS, JACKS**
RT02	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	JH01	EA02291U	HDMI RECEPTACLE DC1R019HBA
RT03	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	JNJ1	EQ00873	PLUG LPR8029-04**F
RT04	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	JQ01	EY01772R	SD MEMORY CARD 500998-0900
RT05	0790037R	RES.CHIP 1/16W 1.0K OHM	JY01	EQ00721	JACK
RT11	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	JY02	EQ00961	JACK
RT24	0790037R	RES.CHIP 1/16W 1.0K OHM	JY03	EQ00741	JACK
RT25	0790051R	RES.CHIP 1/16W 10K OHM	JY05	EQ00771	JACK
RT38	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	PCST	EA04044R	14P 1.25MM PITCH CONNE. (502382)
RT39	0790001R	CHIP RESISTOR RECJUMPER-1-16C16T1608	PDS	EA02332R	12P 1.0MM PITCH CONNE. 501331-1207
RT40	0790052R	RES.CHIP 1/16W 12K OHM	PFA1	EA02192R	3P SMT ZH CONN. POST SIDE
RT41	0790052R	RES.CHIP 1/16W 12K OHM	PH01	EA02662R	PLUG

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SYMBOL	PART #	DESCRIPTION
PLS	EA02331R	11P 1.0MM PITCH CONNE. 501331-
PSM	EA02223U	0.5 PITCH 160P B TO B CONN. SHIELD TYPE RECE
PTC	EA04039R	10P 1.25MM PITCH CONNE. (502382)
		MISCELLANEOUS
UT01	HC00701	ENGD6305
#TG1	MF02032	GASKET 5-2-15 J1G
#TG2	MF02033	GASKET 5-2-45 J1G
		FILTER PWB
	JP55133	
		CAPACITORS
C9A1A ⚠	AN02089S	PLASTIC FILM CAP.CQ-105K251PVS
C9A2A ⚠	AN02087S	PLASTIC FILM CAP.CQ-474K251PVS
C9A3 ⚠	AJ00163R	CAP. CERAMIC CS11-E2GA222MYVS
C9A4 ⚠	AJ00163R	CAP. CERAMIC CS11-E2GA222MYVS
		JUMPERS
K9A1	2784381M	0.60MM TAPED JUMP.WIRE
KL9A2	2784381M	0.60MM TAPED JUMP.WIRE
		PROTECTORS, FUSES
F9A2 ⚠	FN00475	FUSE 51MS 063 L-U 6.3A
NF9A2 ⚠	2721351	FUSE HOLDER
		COILS
L9A1 ⚠	BZ06251	LINE FILTER TF2722H-A152Y8R0-0
		RESISTORS
R9A1 ⚠	AT03661M	RES.MTL GRAZD FLM 1/2W 470K
		SWITCHES
S9A0 ⚠	FG00251	POWER SW SPW02N02SY17-2-1(U1D1
		CONNECTORS, JACKS
EGND1	ED01651R	CONNECTOR CP-03PH2R5V
EGND2	ED01651R	CONNECTOR CP-03PH2R5V
PFAC	2674281	3P B-PLUG PIN
PPU1	ED02812	6P VH CONNECTOR PLUG #2,4,5 NC
		FINAL ASS'Y
		SPEAKERS
SPB	GK01651	SPEAKER-04X15D
		MISCELLANEOUS
EFAN	GS00696	DC MOTOR:DC2406KL-04W-B29-T0E
		CONNECTORS, JACKS
E901 ⚠	EP00411	AC INLET SK-1015(F1-0)
ECN1	EF27631	CONNECTOR CABLE CO-51C-C0R5S101FFC
ECN23	EF21615	9P VH-VH CONNE. L=330MM
ECN6	2908838S	9J PH CONNECTOR 200MM
EFAC	EF27851	3P VH - SFPS-61T-250 X3 LEAD L=80MM
EFAN1	EF26106	3P 2.0MM PITCH PALR-ZH CONNE. L=225MM
EGND	EF24041	CO-01T-T0R0-101

SYMBOL	PART #	DESCRIPTION
EMH	EK01934	WIRE (PROCESSED) JF04R0R031515AA
EPM1	EF27362	8P EH-502380 CONNE. L=180MM
EPM2	EF27711	15P EH-DF3/DF3 CONNE. L=820MM
EPU1	EF25047	6P VH CONNE. L=470MM #2
ERF	EY02262	PLUG L NIC8014N
ESD	EF27431	12P 1.0MM PITCH 501330 CONNE. L=240MM
ESL	EF27422	11P 1.0MM PITCH 501330 CONNE. L=740MM
ESP1	EF27347	4P FASTON-PA CONNE. L=640MM (#110 #187)
ESTC	EF27402	14P 1.25MM PITCH 502380-GH CONNE. L=250MM
		FERRITE CORES
NCN1	GX00751	CLAMP FILTER ZCAT4625-3430D-BK
NLTS	GX00667	CLAMP FERRITE CORE K5BRC 26X30X13-MB(GRAY)
NPM3	GX00666	CLAMP FERRITE CORE K5C RC 16X2
NPU1	GX00667	CLAMP FERRITE CORE K5BRC 26X30X13-MB(GRAY)
NSD	GX00666	CLAMP FERRITE CORE K5C RC 16X2
NSD1	2169511	COIL LX-ZCAT1518
NSP1	GX00666	CLAMP FERRITE CORE K5C RC 16X2
		ACCESSORIES
E01 ⚠	EV01841	POWER CORD 125V10A UL/CSA
E203	FQ00021	DRY BATTERY(R6P-AA)
N01	QR70191	H401 INST. BOOK
N01	QR70201	T501 INST. BOOK
N02	QR70211	H401 EASY GUIDE
N02	QR70221	T501 EASY GUIDE
N203	QT44792	2007 WARRANTY CARD CANADA
N204	QT49441	NATIONAL WARRANTY CARD 06 (EXCEPT H4011)
U01	HL02075	REMOTE CONTROL CLU-4371UG2 (H401 MODEL)
U01	HL02076	REMOTE CONTROL CLU-4372UG2 (H4011 MODEL)
U01	HL02401	REMOTE CONTROL UNIT CLU-4371A (T501 MODEL)
		42A5/42AE1 PANEL PARTS
SDR42A5U	VB06271	FPF39R-SDR57141
SDR42A5D	VB06272	FPF39R-SDR57142
XSUS PWB	VB06311	FPF39R-XSS56171
YSUS PWB	VB06321	FPF39R-YSS56181
ABUSL PWB	VB06331	FPF39R-ABL54861
ABUSR PWB	VB06341	FPF39R-ABL54871
XBUSU PWB	VB06351	FPF39R-XBU56191
XBUSD PWB	VB06361	FPF39R-XBD56201
LOGIC PWB	VB06401	FPF40R-LGC57461 (H401/H4011 MODEL)
LOGIC PWB	VB06401	FPF39R-LGC54961 (T501 MODEL)
FLAT CONN	VB06391	EK02281
FLAT CONN	VB06392	EK02282
FLAT CONN	VB06393	EK02283
FLAT CONN	VB06394	EK02284
Power Conn	VB06431	EF26951
Power Conn	VB06441	EF26961
SCREWS	TS06023	F6-SW2N3-08121
		(FOR REFERENCE SEE PANEL LAYOUT ON PAGE 112)

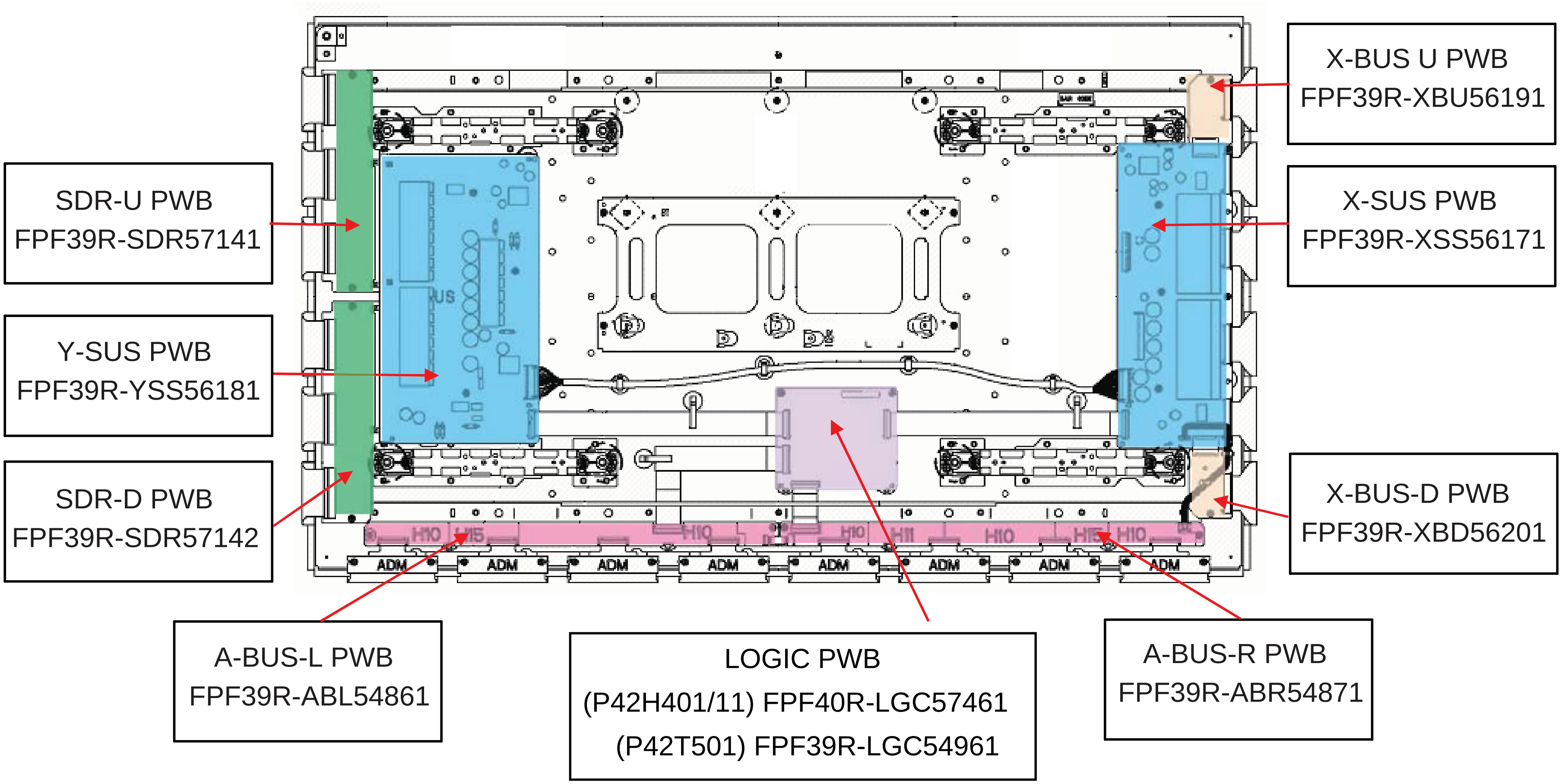
Model	Chassis	Main Chassis	Terminal PWB	Filter PWB	Main Digital PWB Ass'y*	Power Unit	Front Filter	PDP Panel
P42H401	DW3C	UE27033	JP55121	JP55133	UX28023	HA02271	KS22124K	DD00932K
P42T501	DW3C	UE27033	JP55121	JP55133	UX28024	HA02271	KS22125K	DD00931K
P42H4011	DW3C	UE27033	JP55121	JP55133	UX28023	HA02271	KS22124K	DD00932K

* Be sure to check www.hitachiservic CH3 or Digi-Main Software version if replaced. Make sure it is current and up to date.

42 INCH PANEL PWB LAYOUT

P42H401/11 PANEL p/n DD00932K

P42T501 PANEL p/n DD00931


H10
H15
H10
H10
H11
H10
H15
H10
ADM
ADM
ADM
ADM
ADM
ADM
ADM
ADM

X-BUS U PWB
FPF39R-XBU56191

SDR-U PWB
FPF39R-SDR57141

X-SUS PWB
FPF39R-XSS56171

Y-SUS PWB
FPF39R-YSS56181

SDR-D PWB
FPF39R-SDR57142

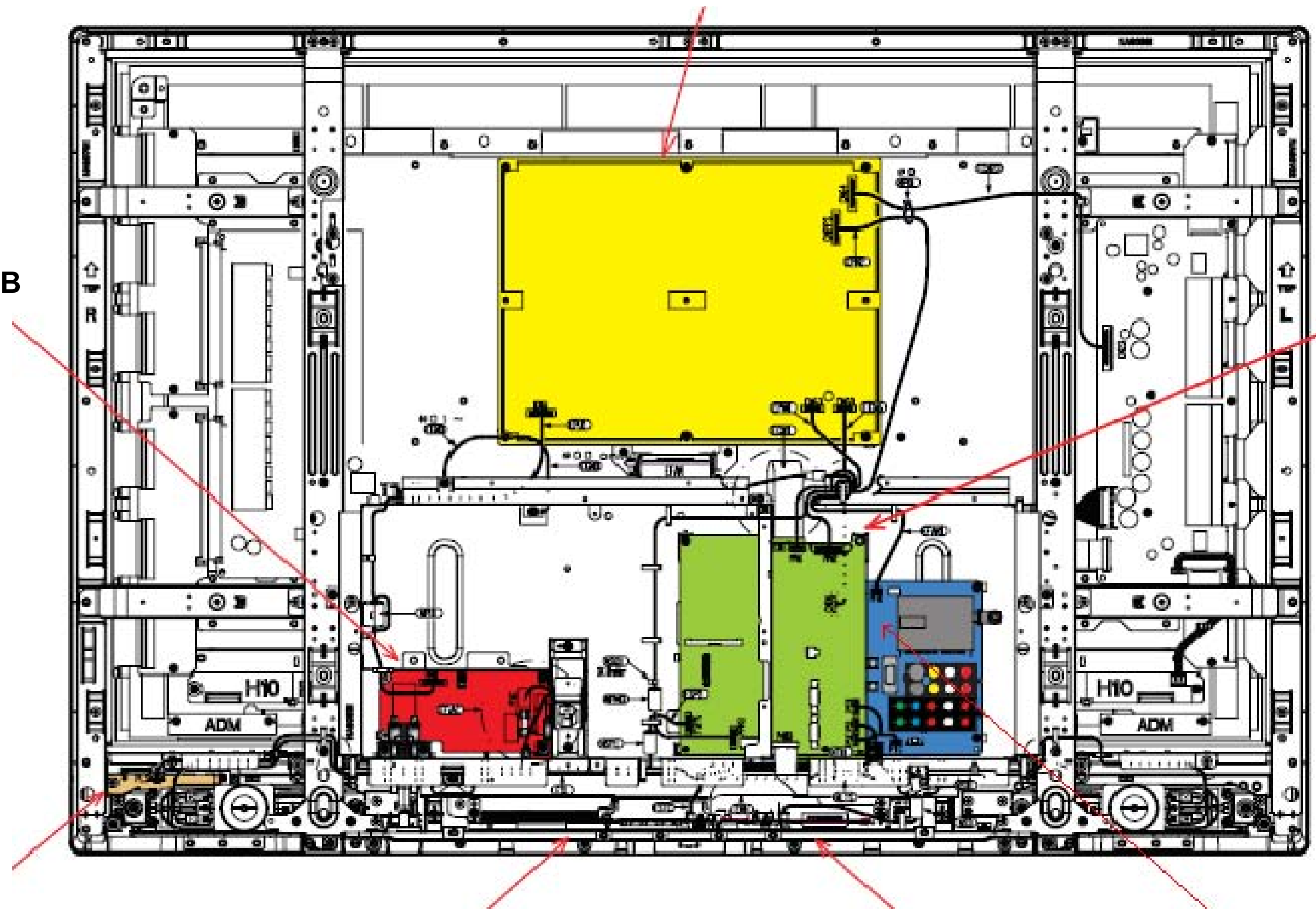
X-BUS-D PWB
FPF39R-XBD56201

A-BUS-L PWB
FPF39R-ABL54861

LOGIC PWB
(P42H401/11) FPF40R-LGC57461
(P42T501) FPF39R-LGC54961

A-BUS-R PWB
FPF39R-ABR54871

42" MODEL BOARD LAYOUT DIAGRAM



POWER UNIT PWB HA02271

FILTER PWB
JP55133

DIGI-MAIN PWB
(NEPTUNE)

MAIN DIGITAL PWB

MODEL	PART NUMBER
P42H401	UX28023
P42H4011	UX28023
P42T501	UX28024

LED PWB(X480415)

CONTROL PWB(X480426)

SD PWB (X480420)

TERMINAL PWB (JP55121)

TERMINAL PWB, p/n JP55121

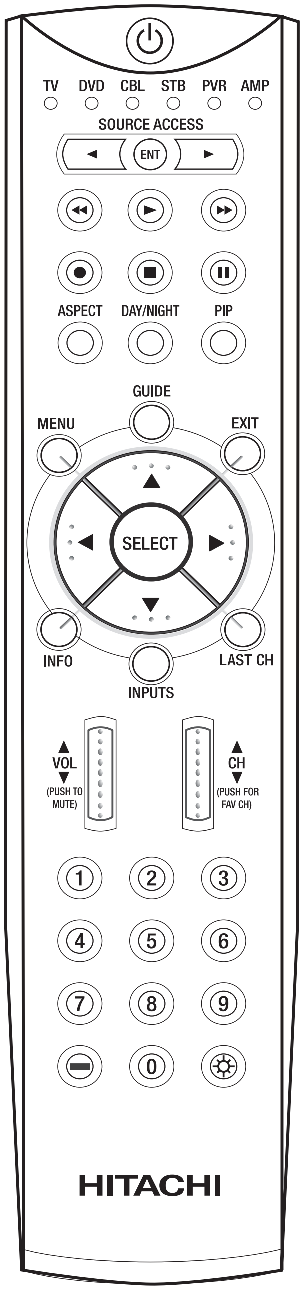
CH 1 CH 3

QUICK REFERENCE PARTS LIST
IC'S & UNITS

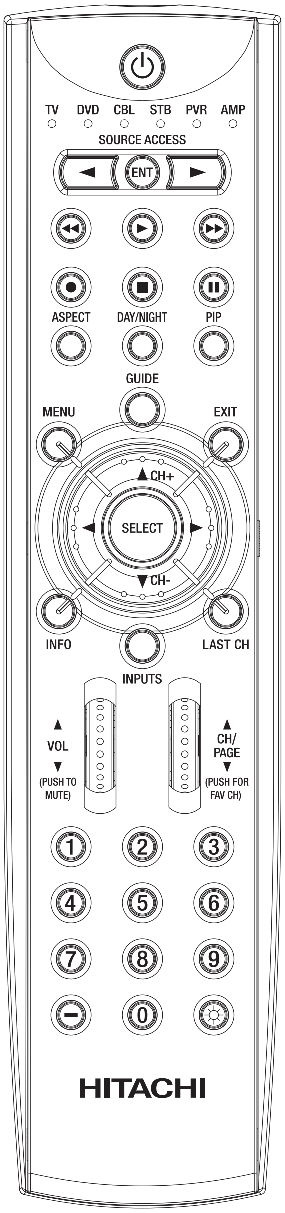
No.	Symbol	P#	Description	Function	PWB ASSY	Remarks
1	F9A2	FN00475	FUSE 51MS 063 L-U 6.3A	FUSE	FILTER	
2	L9A1	BZ06251	LINE FILTER TF2722H-A152Y8R0-0	AC NOISE FILTER	FILTER	
3	DN01	CC01871R	LIGHT EMITTING DIODE	RED/ORANGE LED	LED	
4	DN02	CC01863R	SML012BC4T	BLUE LED	LED	
5	DN03	CC01872R	LIGHT EMITTING DIODE	RED/ORANGE LED	LED	
6	HN01	CZ01371U	INFRARED DETECTING UNIT(GP1UE281RK0VF)	IR RECEIVER	LED	
7	IN01	CK55475R	1GATE LOGIC IC (TC7SZ14FU)	SCHMITT INVERTER	LED	
8	IH01	CK53582R	S-24CS02AFT-TB-G	EEPROM	SD	
9	IH04	CK38329R	DIGITAL MONOLITHIC IC (SN74LVC1G126DCK)	SINGLE BUS BUFFER GATE WITH 3-STATE OUTPUTS	SD	
10	IH05	CK38329R	DIGITAL MONOLITHIC IC (SN74LVC1G126DCK)	SINGLE BUS BUFFER GATE WITH 3-STATE OUTPUTS	SD	
11	IQ01	CK53741R	TC7MBL3245AFK	OCTAL BUS SWITCH	SD	
12	IQ02	CK37216R	MONO IC TK11133CSCL	3.3 V VOLTAGE REGULATOR W ON/OFF SW	SD	
13	IQ03	CK55511R	1G LOGIC IC (TC7SG17FU)	CLOCK BUFFER	SD	
14	JWE1	EY01772R	SD MEMORY CARD 500998-0900	MEMORY CARD JACK	SD	
15	HL01	CZ01391	ANALOG MONOLITHIC IC (GP1FSV51TK0F)	OPTICAL MINI JACK FOR DIGITAL AUDIO	TERMINAL	
16	I001	CK53531U	R2S11008FP	AUDIO/VIDEO SELECTOR	TERMINAL	
17	I002	CK37218R	MONO IC TK11150CSCL	5 V VOLTAGE REGULATOR W ON/OFF SW	TERMINAL	
18	I003	CK51331R	TK11100CS	ADJUSTABLE POSITIVE LOW DROPOUT REGULATOR IC	TERMINAL	
19	IL01	CK50961R	SN74CB3T3306DCUR	DUAL FET BUS SWITCH	TERMINAL	
20	IP03	CK52481R	TK73400TCB-G	6.2 VOLTAGE REGULATOR FOR TV / VTR USE	TERMINAL	
21	IT03	CK53612R	TC7PA53FU	2 CHANNEL MULTIPLEXER/DEMULTIPLEXER	TERMINAL	
22	IT05	CK37218R	MONO IC TK11150CSCL	5 V VOLTAGE REGULATOR W ON/OFF SW	TERMINAL	
23	IT06	CK37605R	IC TK11250CM	5 V VOLTAGE REGULATOR W ON/OFF SW	TERMINAL	
24	IT07	CK37605R	IC TK11250CM	5 V VOLTAGE REGULATOR W ON/OFF SW	TERMINAL	
25	IT09	CK51151R	UPC3221GV	5 V AGC AMPLIFIER	TERMINAL	
26	IY03	CK50027R	DIGITAL MONOLITHIC IC (MAX202IPW)	DUAL RS-232 LINE DRIVER/REC W/+-15KV ESD PROTEC	TERMINAL	
27	UT01	HC00701	ENGD6305	ANALOG/DIGITAL TUNER	TERMINAL	

Service Modes available to the technician (via remote only)

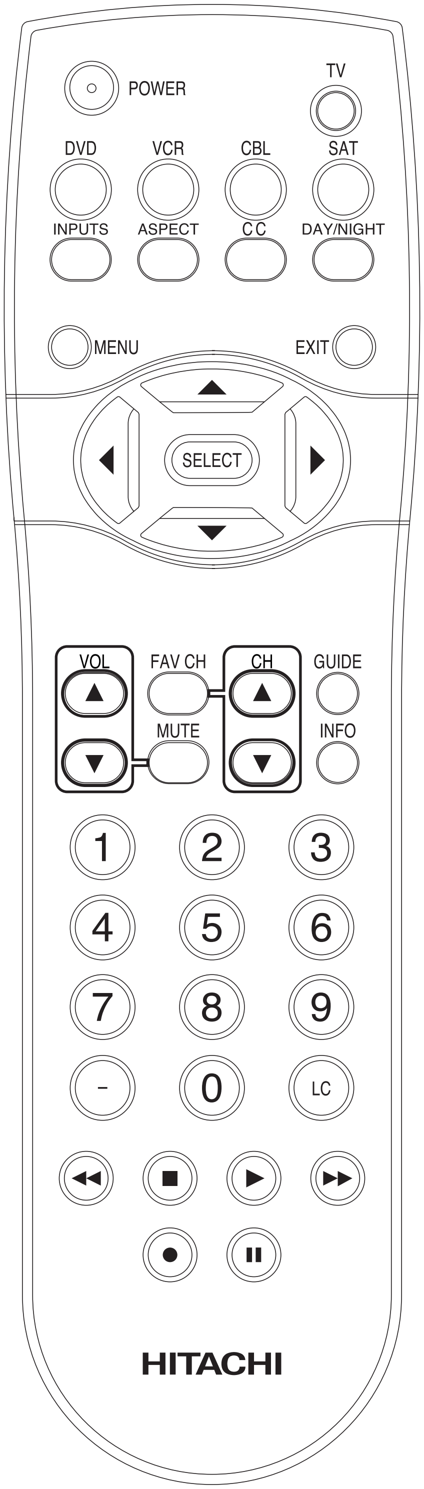
DW1


TV DVD CBL STB PVR AMP
SOURCE ACCESS
ENT
ASPECT
DAY/NIGHT
PIP
GUIDE
MENU
EXIT
SELECT
INFO
LAST CH
INPUTS
VOL (PUSH TO MUTE)
CH (PUSH FOR FAV CH)
1 2 3 4 5 6 7 8 9 0
HITACHI

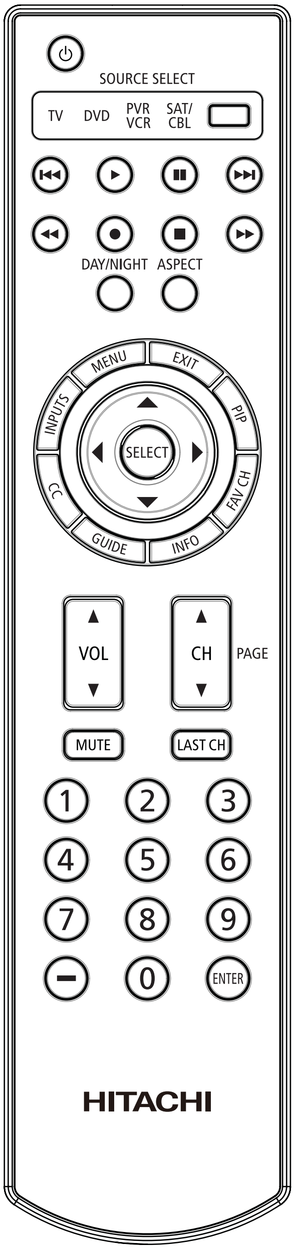
DW2


TV DVD CBL STB PVR AMP
SOURCE ACCESS
ENT
ASPECT
DAY/NIGHT
PIP
GUIDE
MENU
EXIT
CH+
SELECT
CH-
INFO
LAST CH
INPUTS
VOL (PUSH TO MUTE)
CH/ PAGE (PUSH FOR FAV CH)
1 2 3 4 5 6 7 8 9 0
HITACHI

DW3 - H models


POWER
TV
DVD VCR CBL SAT
INPUTS ASPECT CC DAY/NIGHT
MENU
EXIT
SELECT
VOL
FAV CH
CH
GUIDE
MUTE
INFO
1 2 3 4 5 6 7 8 9 - 0 LC
HITACHI

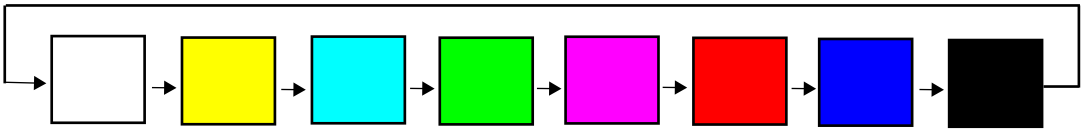
DW3 - T models


SOURCE SELECT
TV DVD PVR VCR SAT/ CBL
DAY/NIGHT
ASPECT
MENU
EXIT
PIP
FAV CH
INFO
GUIDE
CC
INPUTS
SELECT
VOL
CH
PAGE
MUTE
LAST CH
1 2 3 4 5 6 7 8 9 0
ENTER
HITACHI

MENU + MENU + MENU + 8 + SELECT = Service Adj Mode (I2C Adjust)

MENU + MENU + MENU + 9 + SELECT = Panel Test Mode (see below)

CH 4



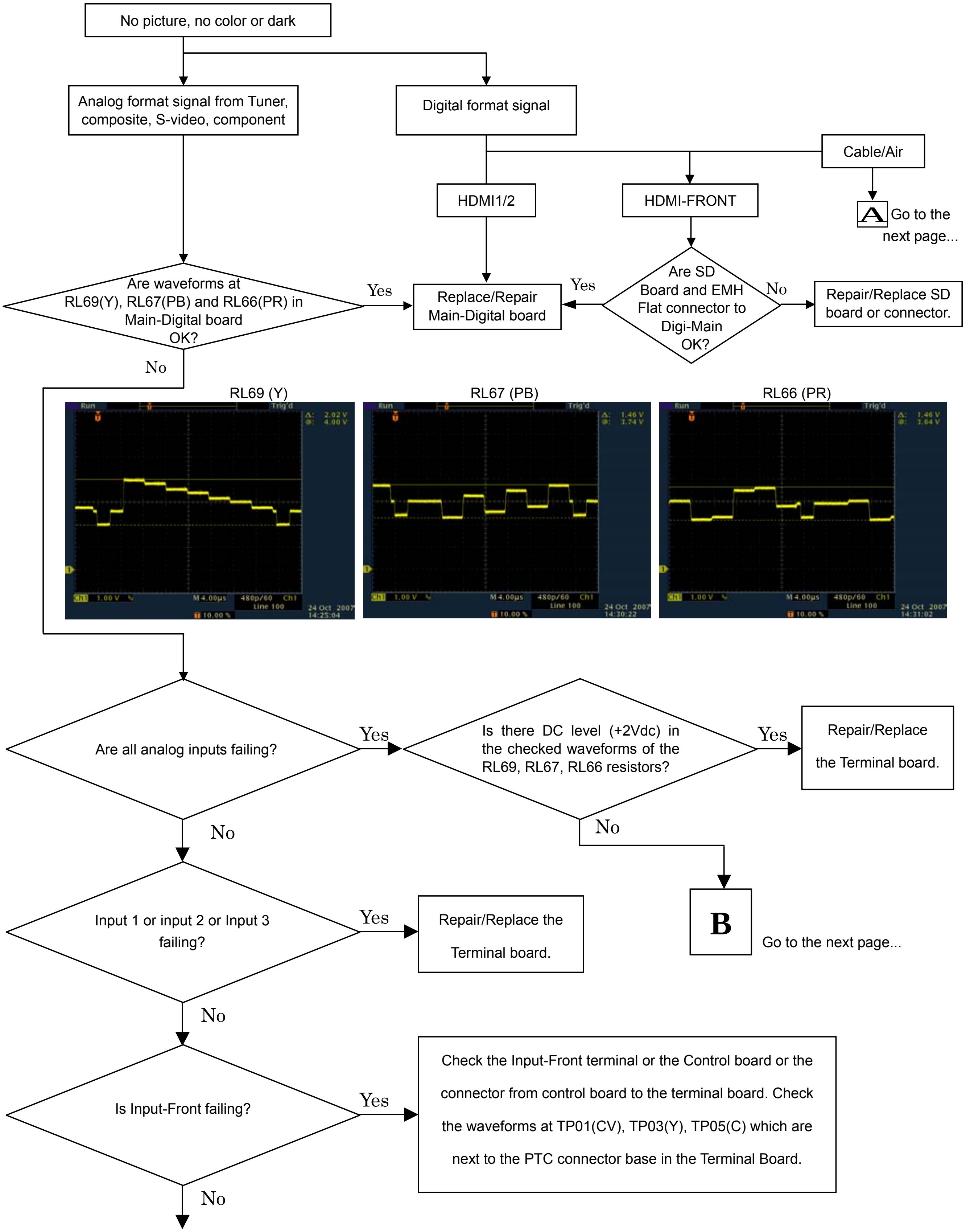
To Index

IN DEPTH TROUBLESHOOTING OF DIGI-MAIN RELATED TO VIDEO PROBLEMS

Trouble-Shooting Guide for video failure.

NOTES: Remember! Your first checking instruments are your senses; see, smell, touch, hear before following the next troubleshooting guides.
Find additional troubleshooting information from the website: www.hitachiserviceusa.com.

NOTE: Waveforms were taken with a 480p YPbPr Color Bar signal.



No picture, no color or dark

Analog format signal from Tuner, composite, S-video, component

Digital format signal

Cable/Air

HDMI1/2

HDMI-FRONT

A Go to the next page...

Are waveforms at RL69(Y), RL67(PB) and RL66(PR) in Main-Digital board OK?

Replace/Repair Main-Digital board

Are SD Board and EMH Flat connector to Digi-Main OK?

Repair/Replace SD board or connector.

Are all analog inputs failing?

Is there DC level (+2Vdc) in the checked waveforms of the RL69, RL67, RL66 resistors?

Repair/Replace the Terminal board.

B Go to the next page...

Input 1 or input 2 or Input 3 failing?

Repair/Replace the Terminal board.

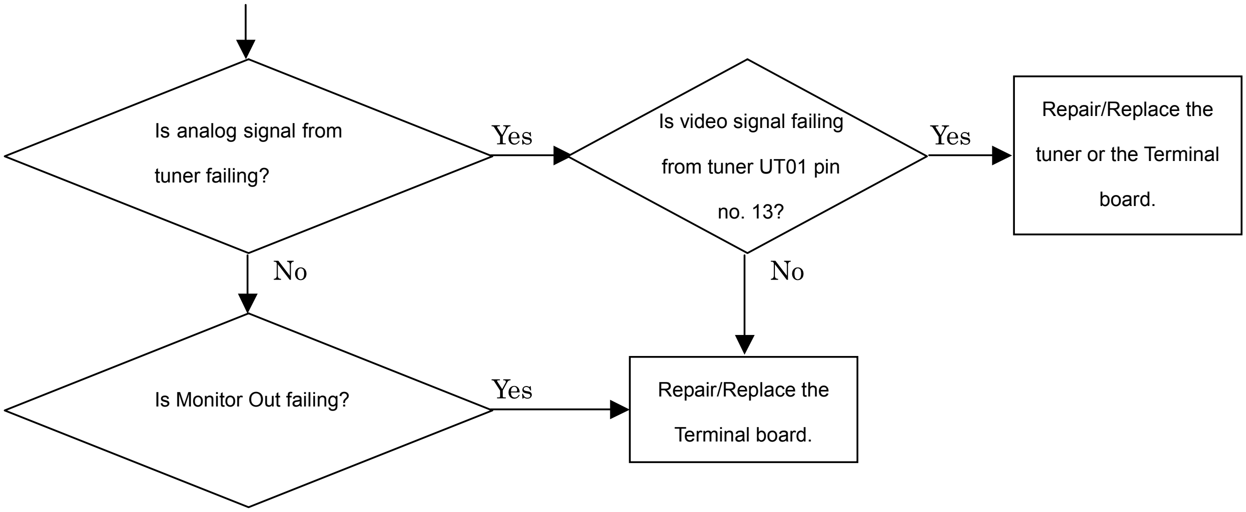
Is Input-Front failing?

Check the Input-Front terminal or the Control board or the connector from control board to the terminal board. Check the waveforms at TP01(CV), TP03(Y), TP05(C) which are next to the PTC connector base in the Terminal Board.

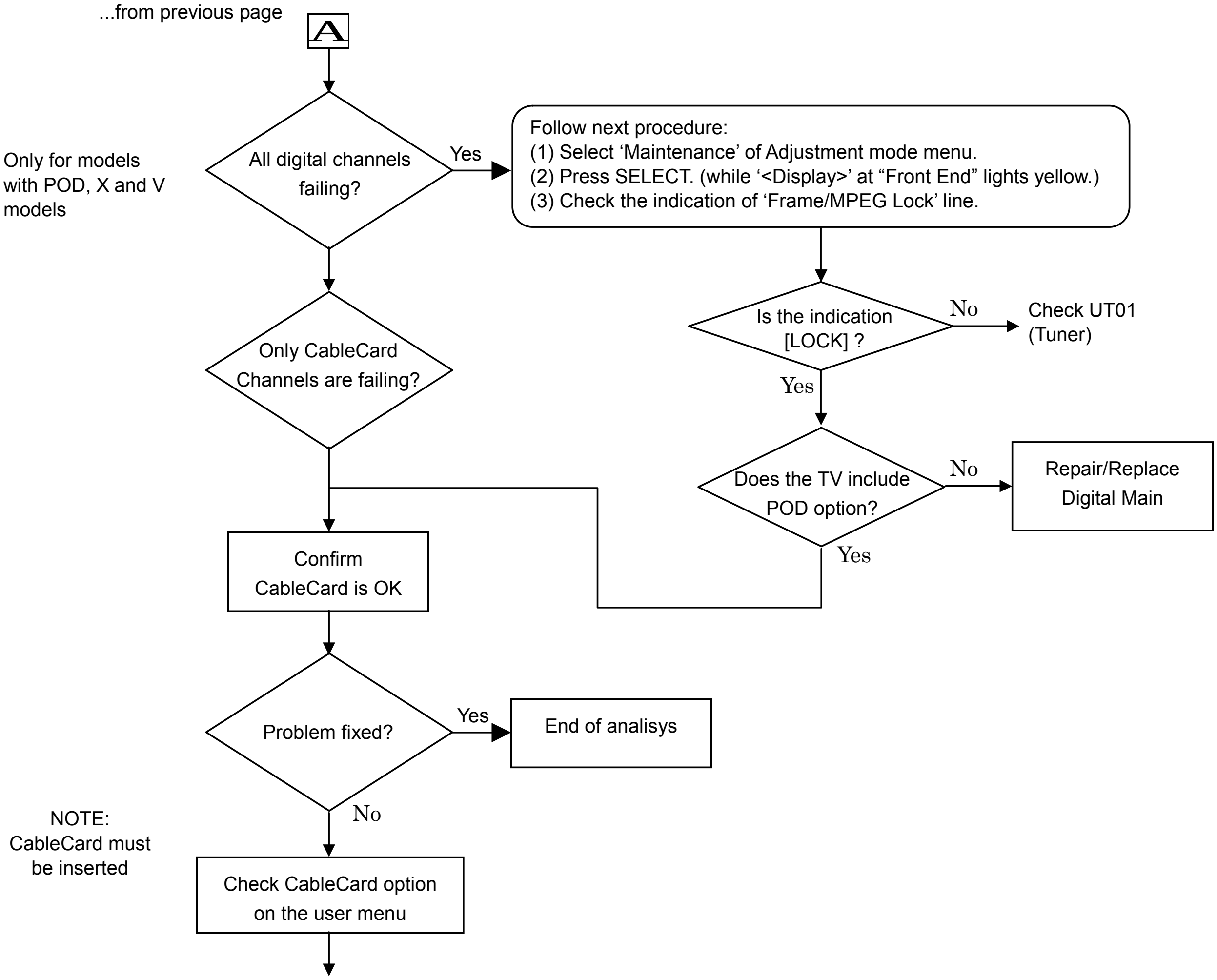
Go to the next page...

Yes
No
Yes
No
RL69 (Y)
RL67 (PB)
RL66 (PR)
Run
Trig'd
Δ: 2.02 V
@: 4.00 V
Ch1 1.00 V
M 4.00µs
480p/60 Ch1
Line 100
10.00 %
24 Oct 2007
14:25:04
Δ: 1.46 V
@: 3.74 V
24 Oct 2007
14:30:22
Δ: 1.46 V
@: 3.64 V
24 Oct 2007
14:31:02
Yes
Yes
No
No
Yes
No
Yes
No

…from the previous page


Is analog signal from tuner failing?
Yes
Is video signal failing from tuner UT01 pin no. 13?
Yes
Repair/Replace the tuner or the Terminal board.
No
No
Is Monitor Out failing?
Yes
Repair/Replace the Terminal board.

...from previous page


A
Only for models with POD, X and V models
All digital channels failing?
Yes
Follow next procedure:
(1) Select 'Maintenance' of Adjustment mode menu.
(2) Press SELECT. (while '<Display>' at "Front End" lights yellow.)
(3) Check the indication of 'Frame/MPEG Lock' line.
Is the indication [LOCK] ?
No
Check UT01 (Tuner)
Yes
Only CableCard Channels are failing?
Does the TV include POD option?
No
Repair/Replace Digital Main
Yes
Confirm CableCard is OK
Problem fixed?
Yes
End of analisys
No
NOTE: CableCard must be inserted
Check CableCard option on the user menu

Continues on the next page…

…continued from the previous page

Does the CableCard user menu appear in the OSD?

Yes

At the CableCard Diagnostics submenu, is CableCard Id number all 0's?

Yes

Repair/Replace Digital Main

No

No

Check POD Cable connector

Is connector Damaged?

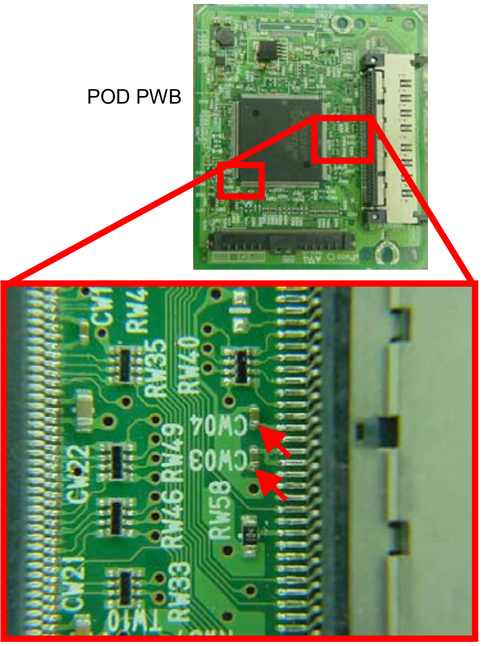
Yes

Repair/Replace POD connector

No

Check POD PWB

POD PWB


CW1
RW4
RW35
RW40
CW04
CW03
CW22
RW49
RW46
RW58
CW21
RW33
TW10

Check the DC voltage in the POD board at the CW03 and CW04 capacitors (+3.3Vdc)

Is voltage OK?

Yes

Check waveform at RW27 pin no. 1 or 2. The CableCard must be inserted (see next page)

Yes

Is the waveform OK?

Yes

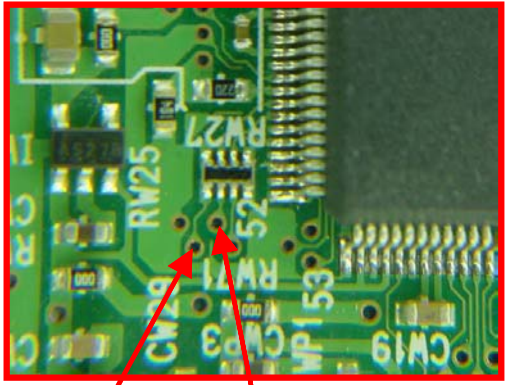
Repair/Replace Digital Main

No

Repair/Replace POD PWB

No

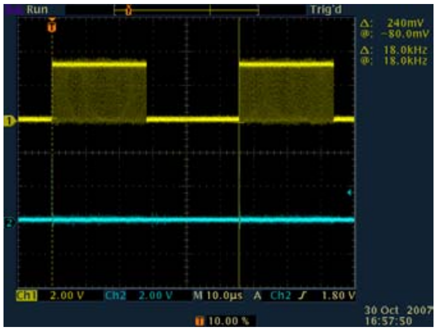
Go to the next page...

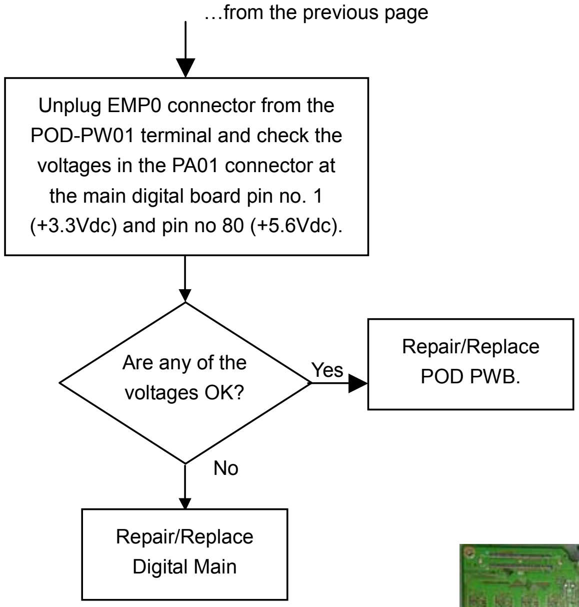

RW27
RW25
RW53
CW19

MPEG Data

MPEG Enable, for oscilloscope's sync

Waveform of RW27
pin 1 or 2 in yellow - MPEG data signal.
Pin 3 or 4 In Cyan, MPEG enable signal.





…from the previous page

Unplug EMP0 connector from the POD-PW01 terminal and check the voltages in the PA01 connector at the main digital board pin no. 1 (+3.3Vdc) and pin no 80 (+5.6Vdc).

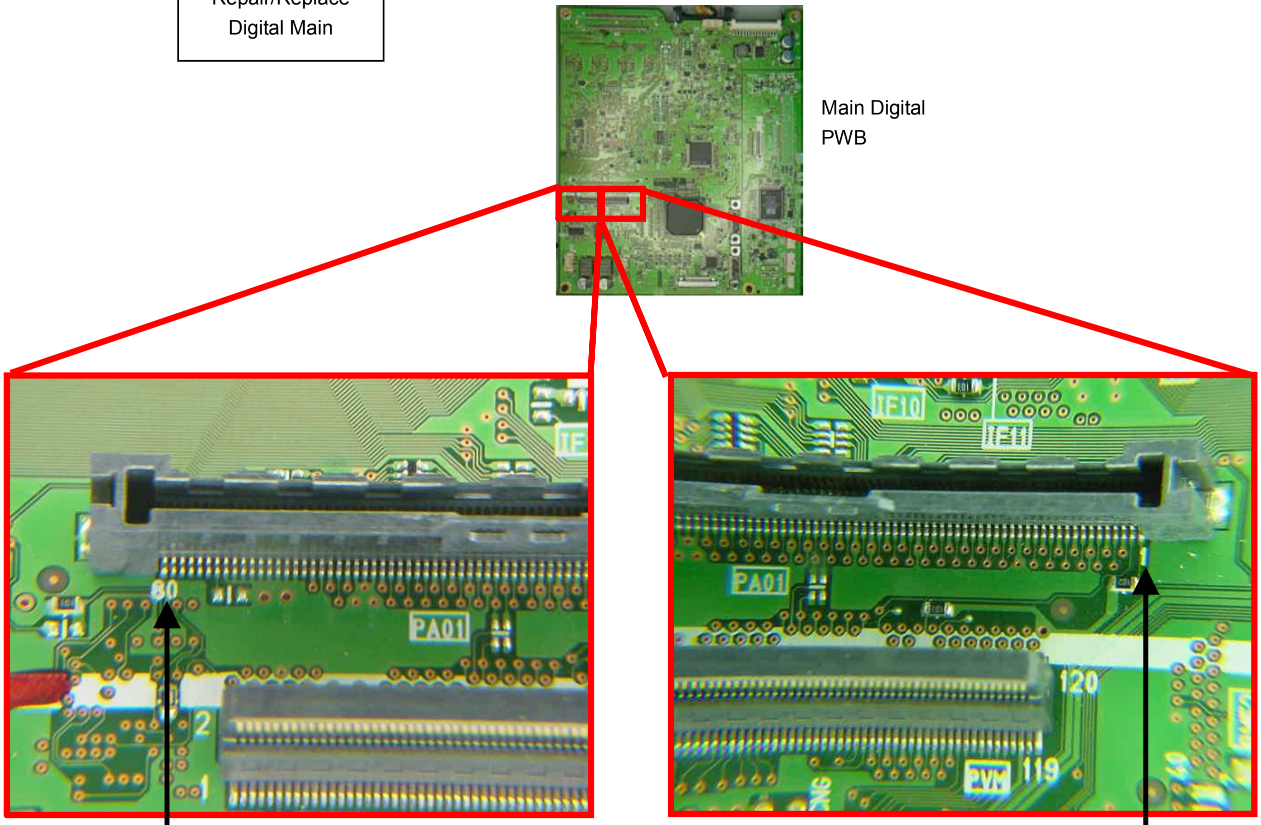
Are any of the voltages OK?

Yes

Repair/Replace POD PWB.

No

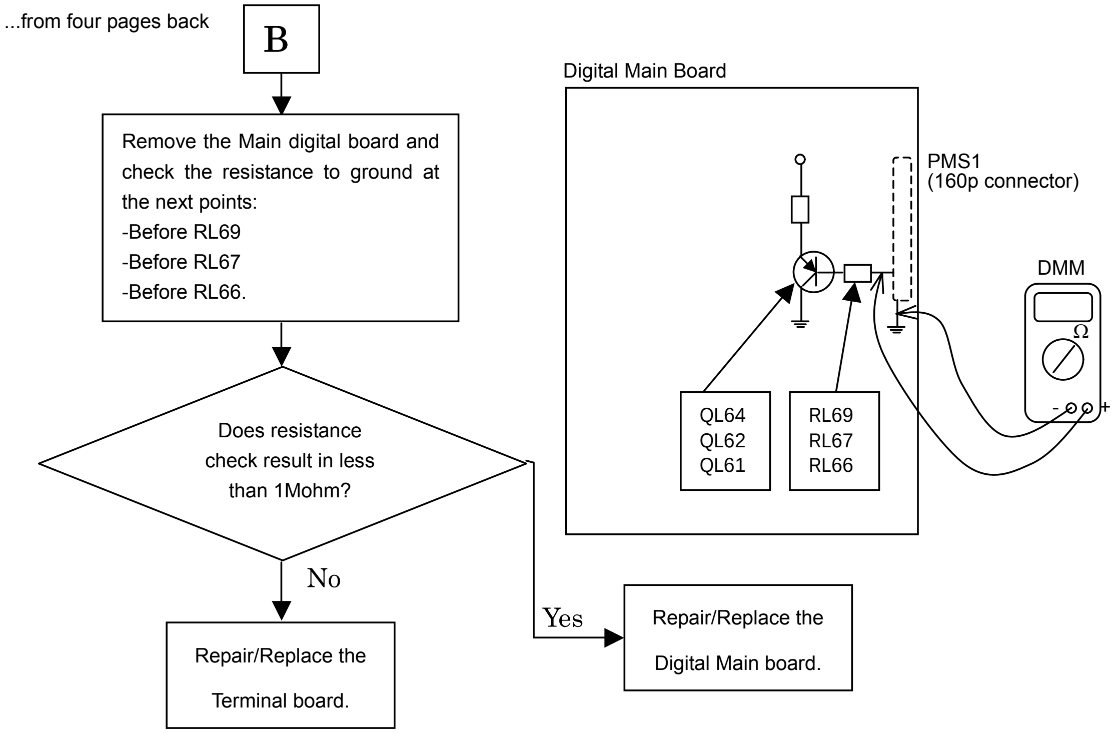
Repair/Replace Digital Main


80
PA01
2
1
IF10
IF11
PA01
120
PVM
119

Main Digital PWB

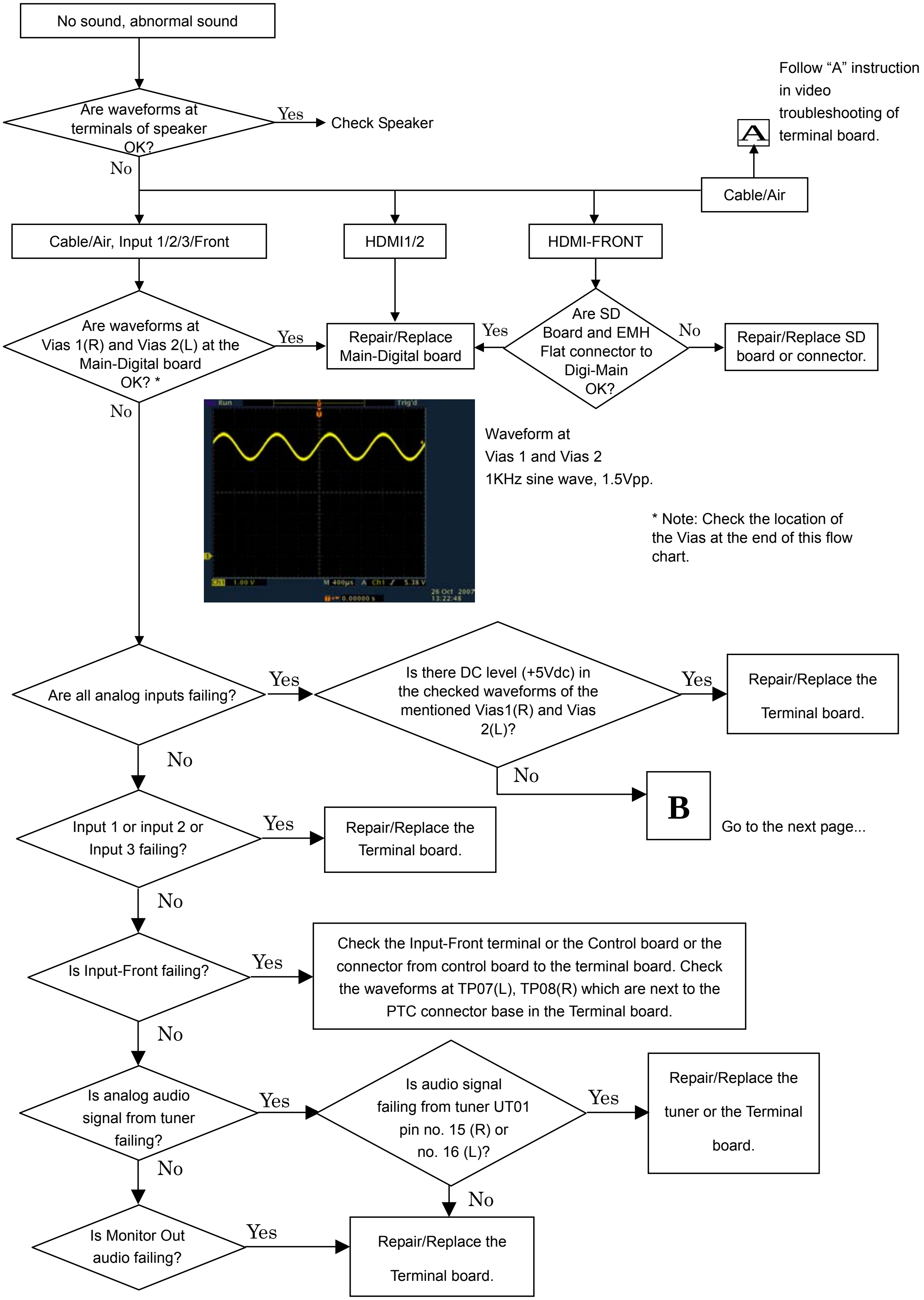
PA01, pin no. 80, +5.6Vdc

PA01, pin no. 1, +3.3Vdc


...from four pages back
B
Remove the Main digital board and check the resistance to ground at the next points:
-Before RL69
-Before RL67
-Before RL66.
Does resistance check result in less than 1Mohm?
No
Yes
Repair/Replace the Terminal board.
Repair/Replace the Digital Main board.
Digital Main Board
PMS1
(160p connector)
DMM
Ω
-
+
QL64
QL62
QL61
RL69
RL67
RL66

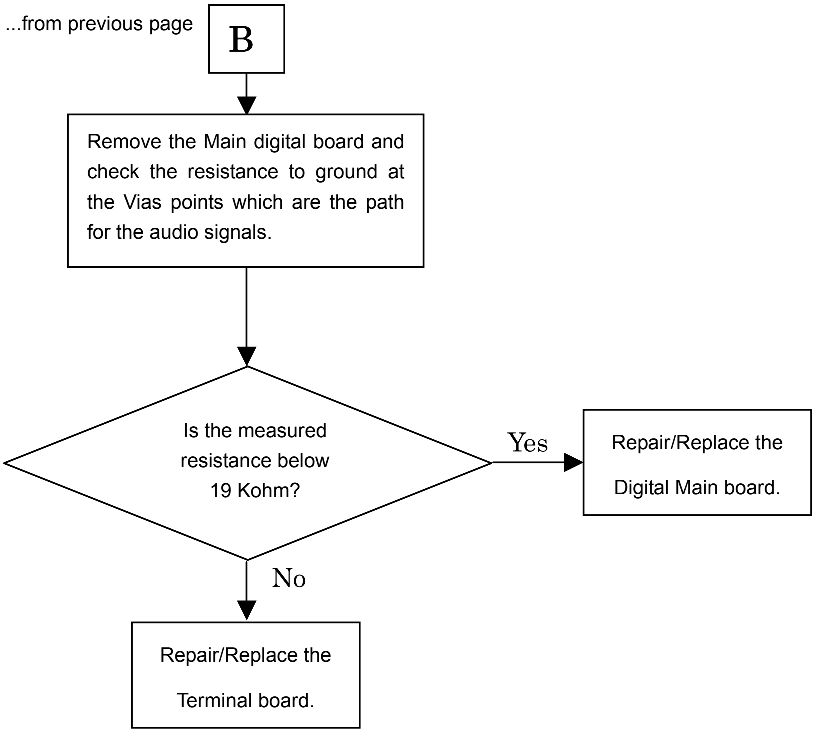
IN DEPTH TROUBLESHOOTING OF DIGI-MAIN RELATED TO AUDIO PROBLEMS

Trouble-shooting guide for audio failure.


No sound, abnormal sound
Are waveforms at terminals of speaker OK?
Yes
Check Speaker
No
Follow "A" instruction in video troubleshooting of terminal board.
A
Cable/Air
Cable/Air, Input 1/2/3/Front
HDMI1/2
HDMI-FRONT
Are waveforms at Vias 1(R) and Vias 2(L) at the Main-Digital board OK? *
Yes
Repair/Replace Main-Digital board
Yes
Are SD Board and EMH Flat connector to Digi-Main OK?
No
Repair/Replace SD board or connector.
No
Run
Trig'd
Ch1 1.00 V
M 400µs A Ch1 ∫ 5.38 V
26 Oct 2007 13:22:48
0.00000 s
Are all analog inputs failing?
Yes
Is there DC level (+5Vdc) in the checked waveforms of the mentioned Vias1(R) and Vias 2(L)?
Yes
Repair/Replace the Terminal board.
No
B
Go to the next page...
No
Input 1 or input 2 or Input 3 failing?
Yes
Repair/Replace the Terminal board.
No
Is Input-Front failing?
Yes
Check the Input-Front terminal or the Control board or the connector from control board to the terminal board. Check the waveforms at TP07(L), TP08(R) which are next to the PTC connector base in the Terminal board.
No
Is analog audio signal from tuner failing?
Yes
Is audio signal failing from tuner UT01 pin no. 15 (R) or no. 16 (L)?
Yes
Repair/Replace the tuner or the Terminal board.
No
No
Is Monitor Out audio failing?
Yes
Repair/Replace the Terminal board.

Waveform at
Vias 1 and Vias 2
1KHz sine wave, 1.5Vpp.

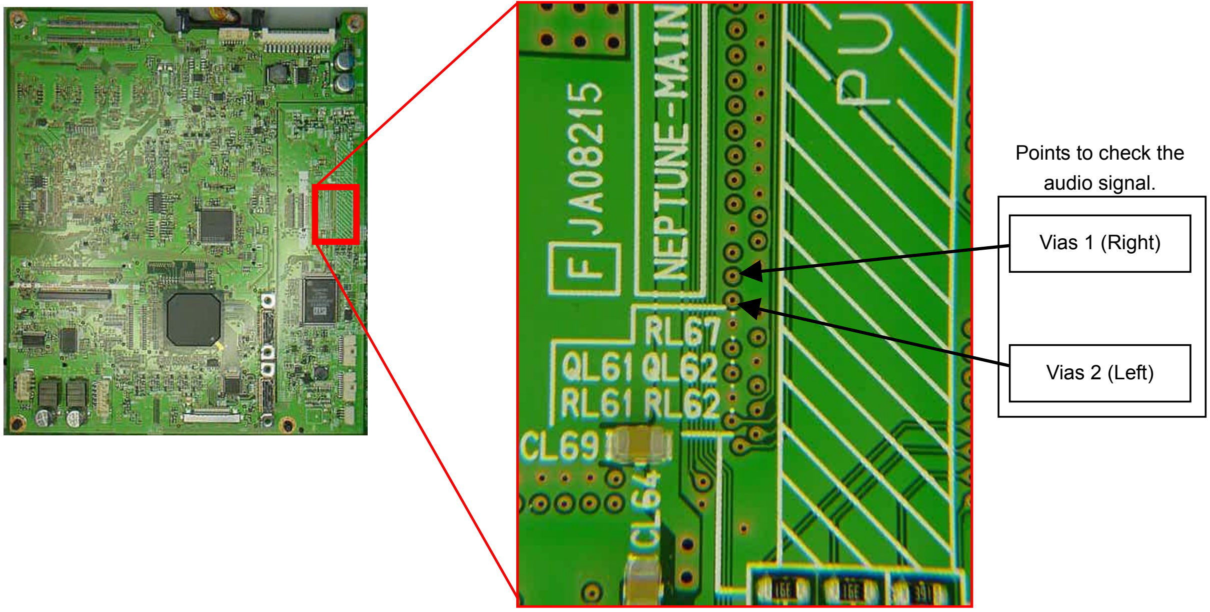
* Note: Check the location of the Vias at the end of this flow chart.


...from previous page
B
Remove the Main digital board and check the resistance to ground at the Vias points which are the path for the audio signals.
Is the measured resistance below 19 Kohm?
Yes
Repair/Replace the Digital Main board.
No
Repair/Replace the Terminal board.

The next pictures show the location of the Vias in the Main-Digital Board.

These Vias are the paths for the audio signals. Check the waveforms and/or the resistance at these Vias.

Digital Main Board,

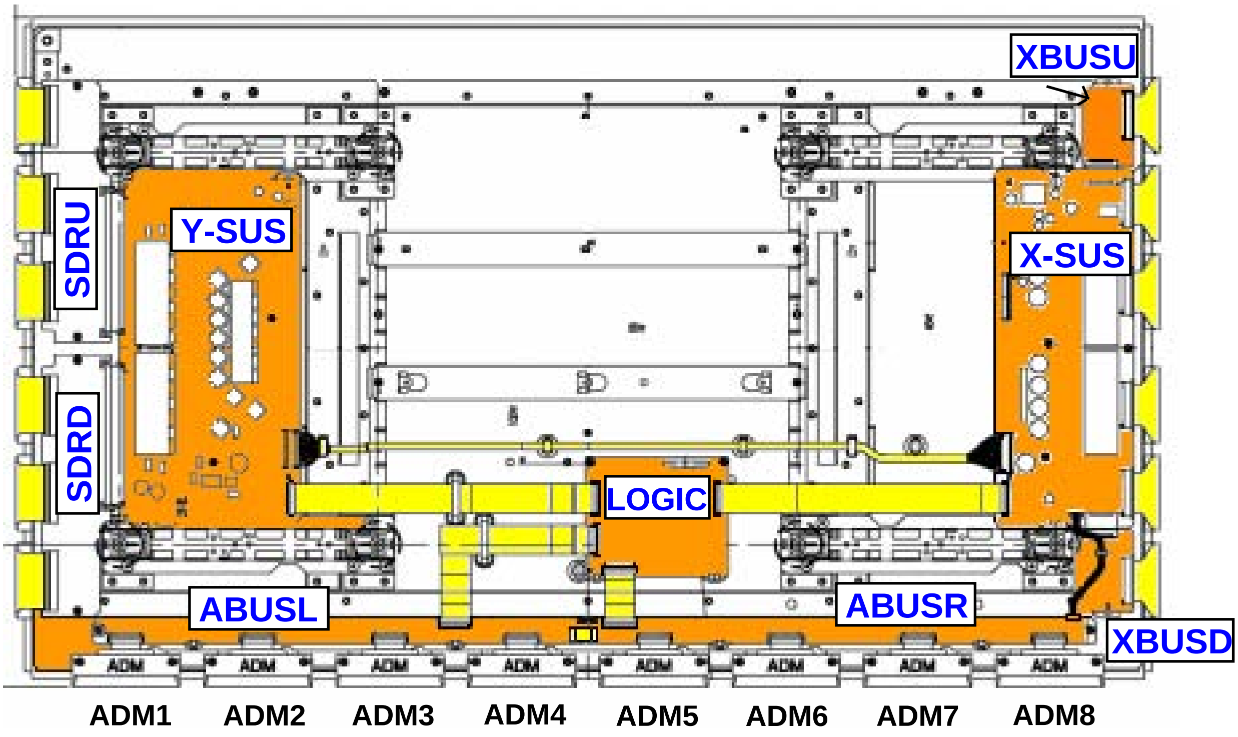

F JA08215
NEPTUNE-MAIN
PU
RL67
QL61 QL62
RL61 RL62
CL69
CL64
Points to check the audio signal.
Vias 1 (Right)
Vias 2 (Left)

3. NAME and FUNCTION of Each Parts

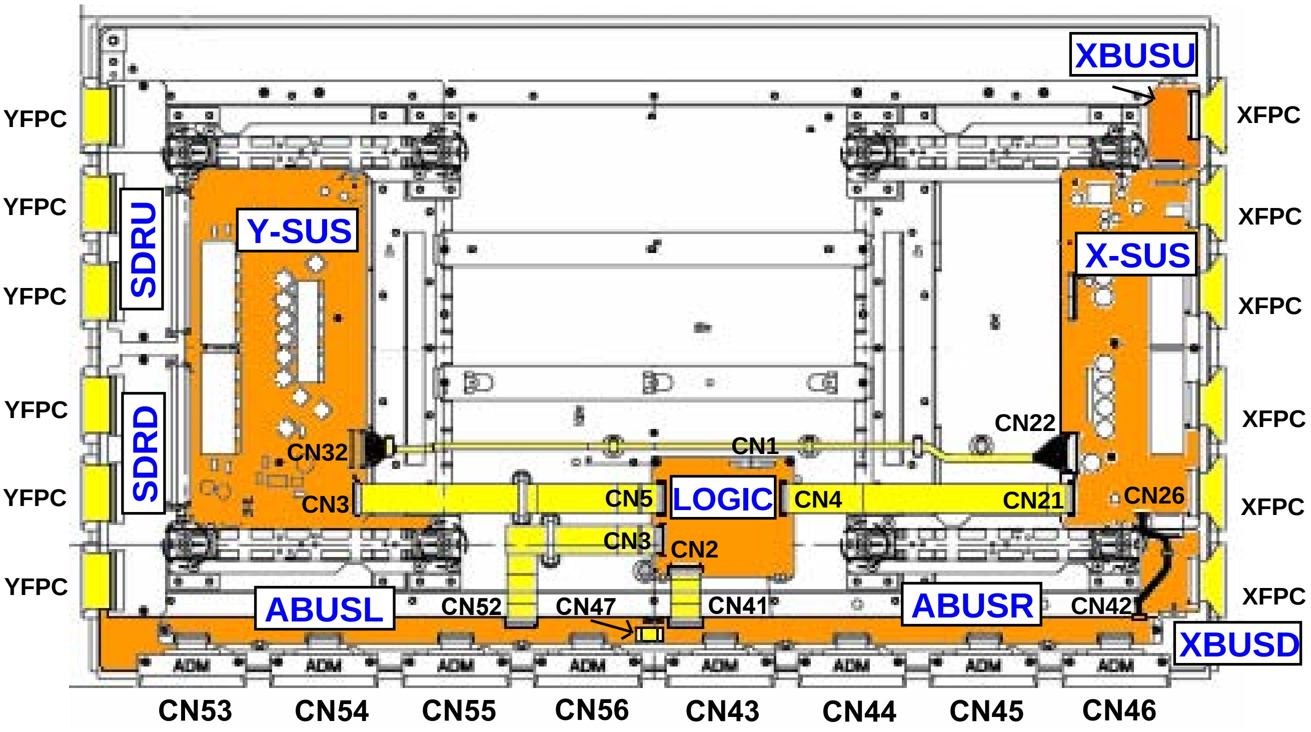
3.1 CONFIGURATION

42 INCH PWB CONFIGURATION

FPF42C128135UB-55 (42AE1)/ UB-75 (42A5) / UC- (42A6)**


XBUSU
SDRU
Y-SUS
X-SUS
SDRD
LOGIC
ABUSL
ABUSR
XBUSD
ADM1
ADM2
ADM3
ADM4
ADM5
ADM6
ADM7
ADM8

42 INCH CONNECTOR CONFIGURATION


XBUSU
YFPC
YFPC
YFPC
YFPC
YFPC
YFPC
XFPC
XFPC
XFPC
XFPC
XFPC
XFPC
SDRU
Y-SUS
X-SUS
SDRD
CN22
CN32
CN1
CN3
CN5
LOGIC
CN4
CN21
CN26
CN3
CN2
ABUSL
CN52
CN47
CN41
ABUSR
CN42
XBUSD
CN53
CN54
CN55
CN56
CN43
CN44
CN45
CN46

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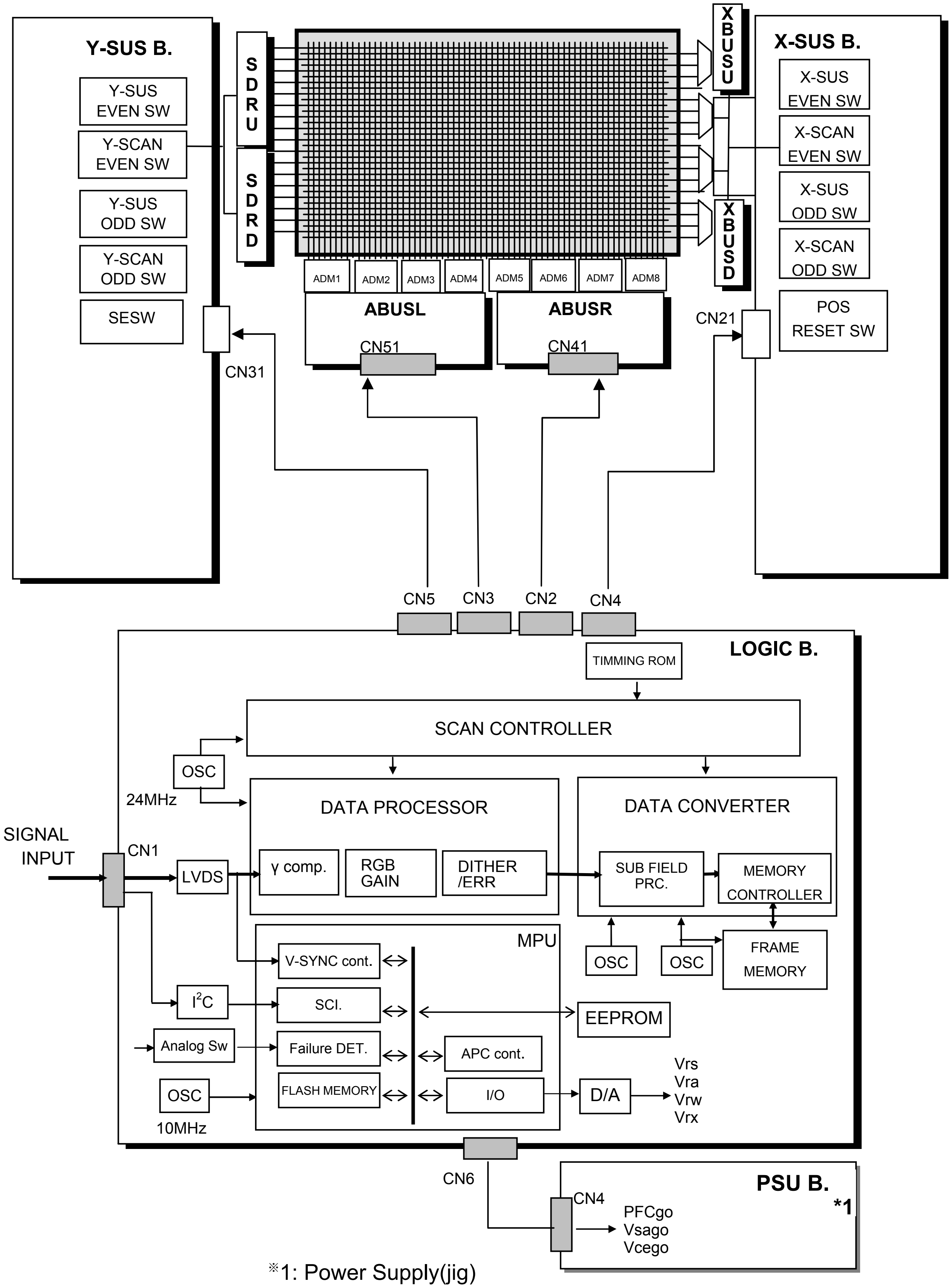
3.2 Block Diagram

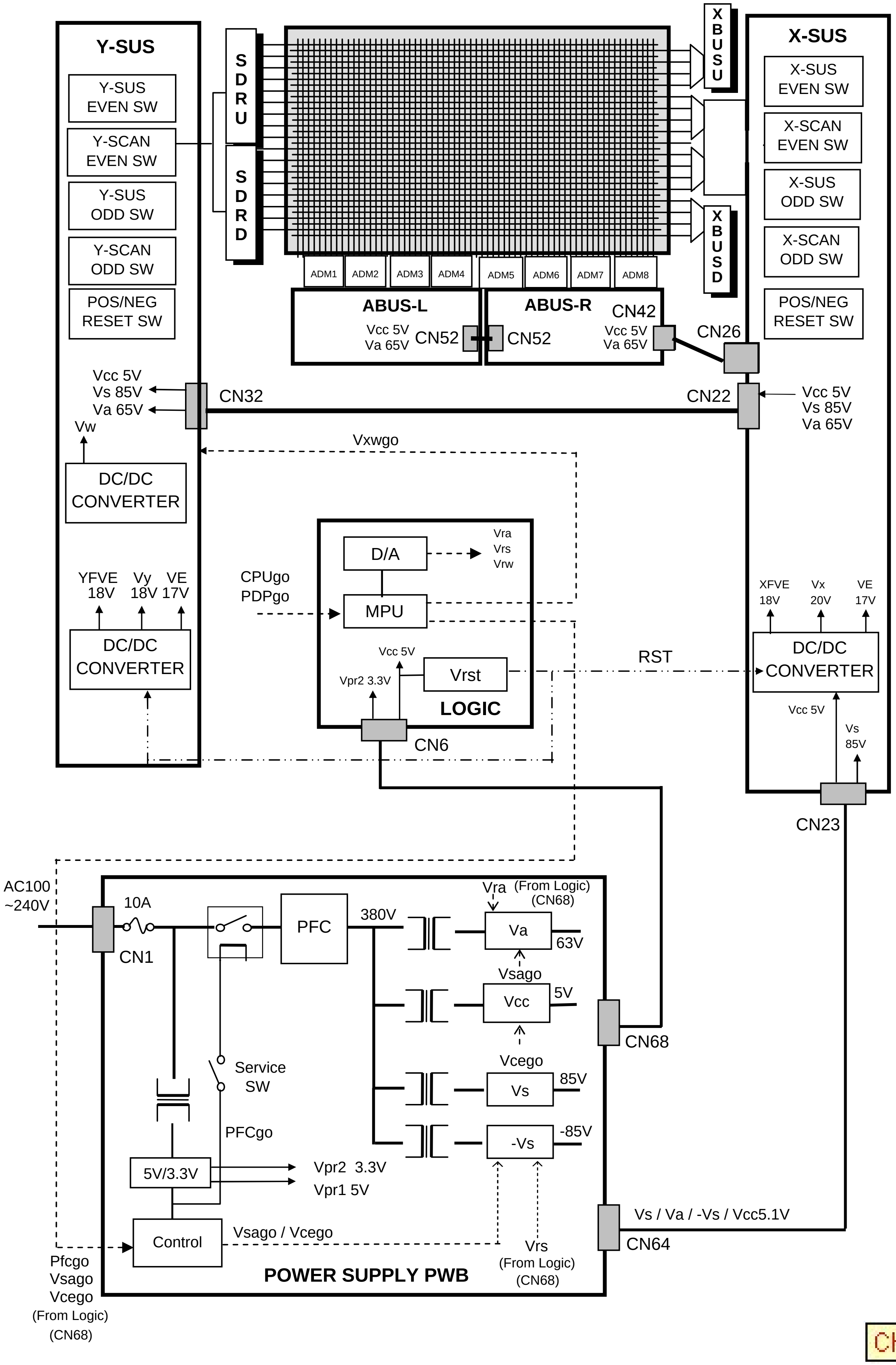
3.2.1 Signal Diagrams


Y-SUS B.
Y-SUS EVEN SW
Y-SCAN EVEN SW
Y-SUS ODD SW
Y-SCAN ODD SW
SESW
CN31
SDRU
SDRD
ADM1
ADM2
ADM3
ADM4
ADM5
ADM6
ADM7
ADM8
ABUSL
CN51
ABUSR
CN41
XBUSU
XBUSD
X-SUS B.
X-SUS EVEN SW
X-SCAN EVEN SW
X-SUS ODD SW
X-SCAN ODD SW
POS RESET SW
CN21
CN5
CN3
CN2
CN4
LOGIC B.
TIMMING ROM
SCAN CONTROLLER
OSC
24MHz
DATA PROCESSOR
DATA CONVERTER
SIGNAL INPUT
CN1
LVDS
γ comp.
RGB GAIN
DITHER /ERR
SUB FIELD PRC.
MEMORY CONTROLLER
MPU
V-SYNC cont.
OSC
OSC
FRAME MEMORY
I²C
SCI.
EEPROM
Analog Sw
Failure DET.
APC cont.
OSC
FLASH MEMORY
I/O
D/A
Vrs
Vra
Vrw
Vrx
10MHz
CN6
PSU B.
*1
CN4
PFCgo
Vsago
Vcego

※1: Power Supply(jig)

TROUBLESHOOTING THE 42AE1 PANEL:

3.2.2 Power Supply Diagram



Y-SUS
Y-SUS EVEN SW
Y-SCAN EVEN SW
Y-SUS ODD SW
Y-SCAN ODD SW
POS/NEG RESET SW
SDRU
SDRD
XBUSU
XBUSD
X-SUS
X-SUS EVEN SW
X-SCAN EVEN SW
X-SUS ODD SW
X-SCAN ODD SW
POS/NEG RESET SW
ADM1
ADM2
ADM3
ADM4
ADM5
ADM6
ADM7
ADM8
ABUS-L
Vcc 5V
Va 65V
CN52
ABUS-R
CN52
CN42
Vcc 5V
Va 65V
CN26
Vcc 5V
Vs 85V
Va 65V
Vw
CN32
CN22
Vcc 5V
Vs 85V
Va 65V
Vxwgo
DC/DC CONVERTER
D/A
Vra
Vrs
Vrw
CPUgo
PDPgo
MPU
Vcc 5V
Vpr2 3.3V
Vrst
LOGIC
CN6
YFVE 18V
Vy 18V
VE 17V
DC/DC CONVERTER
XFVE 18V
Vx 20V
VE 17V
RST
DC/DC CONVERTER
Vcc 5V
Vs 85V
CN23
AC100 ~240V
10A
CN1
PFC
380V
Vra (From Logic) (CN68)
Va
63V
Vsago
Vcc
5V
CN68
Vcego
Vs
85V
Service SW
PFCgo
-Vs
-85V
5V/3.3V
Vpr2 3.3V
Vpr1 5V
Vs / Va / -Vs / Vcc5.1V
CN64
Control
Vsago / Vcego
Vrs (From Logic) (CN68)
POWER SUPPLY PWB
Pfcgo
Vsago
Vcego
(From Logic)
(CN68)

3.3 Function

3.3.1 Logic board Function

1) Data Processor	- γ adjustment(1 / 2.2 / 2.4 / 2.6 / 2.8) - NTSC/EBU format(Color matrix) Switch - RGB gain Control(White balance adjustment, Amplitude limitation) - Error Diffusion Technology(Grayscale adjustment) - Dither(Grayscale adjustment) - Burn-in Pattern generation
2) Data Converter	- Quasi out-line adjustment (luminous pattern control)
3)Scan Controller	- Address driver control signal generator (ADM) - Scan driver control signal generator (SDM) - X / Y sustain control signal generator
4) Waveform ROM	- Waveform Pattern for drive / Timing memory
5) MPU	- Synchronous detection - System control - Driving voltage(Va, Vs, Vw) minor adjustment - Abnormal watch (breakdown detection)/abnormal processing - Is(sustain) current control (sustain pulse control) - Ia(address) current control (sub-field control / sustain pulse control) - External communication control - Flash memory (firmware)
6）EEPROM	- Control parameter memory - The accumulation energizing time (Every hour). - Abnormal status memory (16 careers)

3.3.2 Function of X-SUS Board

1) DC/DC power supply block	- Vcc (+5V) -> Vex (+17V) / XFve (+18V, floating)
2) X switching block	- Switch circuit for sustain period - Switch circuit for address period - Switch circuit for reset period
3）Current detector block	- Isx (sustain) current detection - Ia (address) current detection
4) Voltage detector block	- Vs (sustain) voltage detection - Va (address) voltage detection

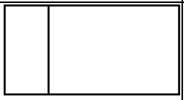
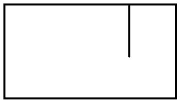
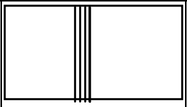
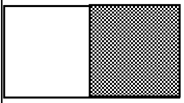
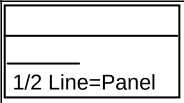
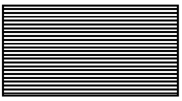
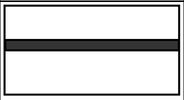
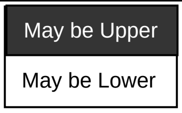
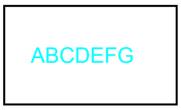
3.3.3 FUNCTION OF Y-SUS BOARD

1) DC/DC power supply block	- Vcc (+5V) -> Ve (+17V) / YFve (+18V, floating) - Vs (+85V) -> Vw (+185V)
2) Y switching block	- Switching for sustain period - Switching for address period - Switching for reset period

TROUBLESHOOTING THE 42AE1 PANEL: P42H401

Be sure to check the Power Supply around all Mounting Screw" and "Supporting" locations for any cracks or board damage before proceeding.

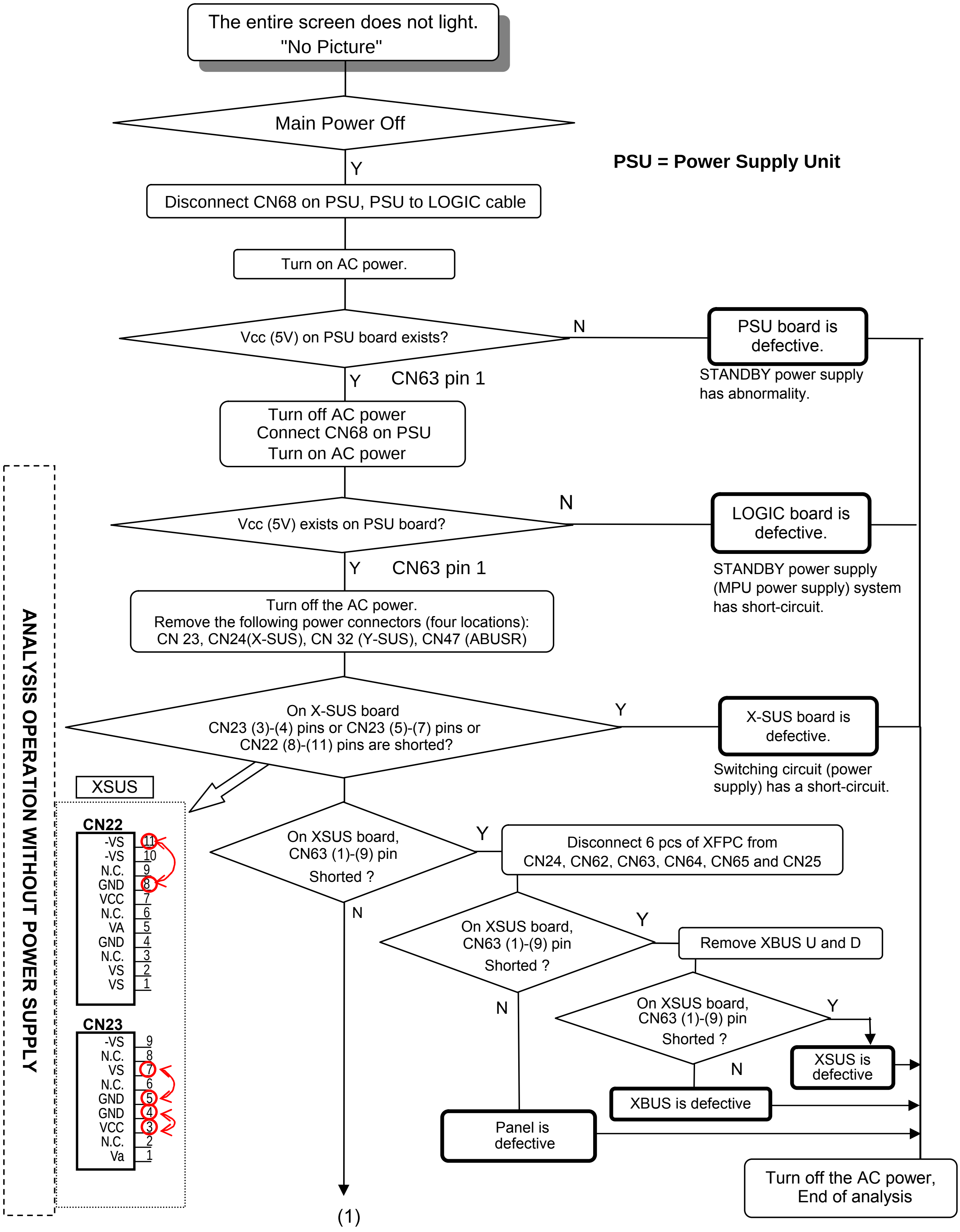
4.5 Fault Symptom

	Fault contents	Fault status		Suspected defective part	Analysis procedure and measure
1	Entire screen does not light also called "No Picture"	After momentarily going on, the screen becomes black immediately or after a few seconds. (Main power is turned off.)		See Troubleshooting Pg. 54 & 128	See Troubleshooting Pg 51, Check All Connectors and cables replace defective part
2		Screen does not show any picture but lights dimly		LOGIC	Replace LOGIC board
3	Vertical Line	Single vertical line		Panel	Replace Panel
4		Vertical line from middle of screen		Panel	Replace Panel
5	Vertical bar	Vertical bar with 1/8 or its multiplication width of screen		LOGIC ABUSL /ABUSR And related connectors Panel	Refer to Page 144 Vertical Bar Troubleshooting
6		Half of picture is No picture		ABUSL / ABUSR LOGIC And related connection	Refer to Page 144 Vertical Bar Troubleshooting
7	Horizontal line	Single horizontal line		Make sure connector from SDR to panel is correctly seated.	Full line, check SDR connector to Panel. Any line short of full Exchange Panel
8		Every other lines do not light in entire screen		X-SUS / Y-SUS SDRU / SDRD	X-SUS / Y-SUS SDRU / SDRD Board exchange
9	Horizontal Bar	Bar width of 1/16 of vertical size of the screen		Make sure connector from SDR to panel is correctly seated. If correct, SDR Defect	Replace SDR
10		Upper or Lower half of the screen does not light		SDRU or SDRD Y-SUS / X-SUS And related connectors	Check all connectors Replace Defective Part
11	Image retention	Fixed contents are always visible		In some cases, residual images may remain after the short term display of still images when the picture changes. NORMAL.	Lower Contrast & Brightness Set Image Power to Mid Perform Screen Wipe.
12	Twinkle	The entire screen momentarily becomes brighter or darker		Loose contact on connector (Especially LVDS connector, CN01, on LOGIC PCB)	Connector / cable re-connection or cable exchange
13	Flicker	The entire screen flickers continuously			
14	Abnormal luminance	Screen is too dark or too bright (out of specifications)		LOGIC	Replace LOGIC
15	Abnormal chrominance	Colors cannot be displayed correctly			
16	Sync is disturbed	Synchronization is abnormal			
17	Picture is distorted	There is an image, but it is not normal			
18	Some steps of gradation are skipped	Luminance linearity is poor			
19	Abnormal Noise	Unusual Noise comes from somewhere in PDP Some Panel Noise is Normal		PSU, XSUS, Y-SUS Cabinet	Find defective part by watching and listening, after that exchange defective part
20	Control of external communication is abnormal	It is unable to adjust contrast chrominance and gamma value.		LOGIC	Replace LOGIC

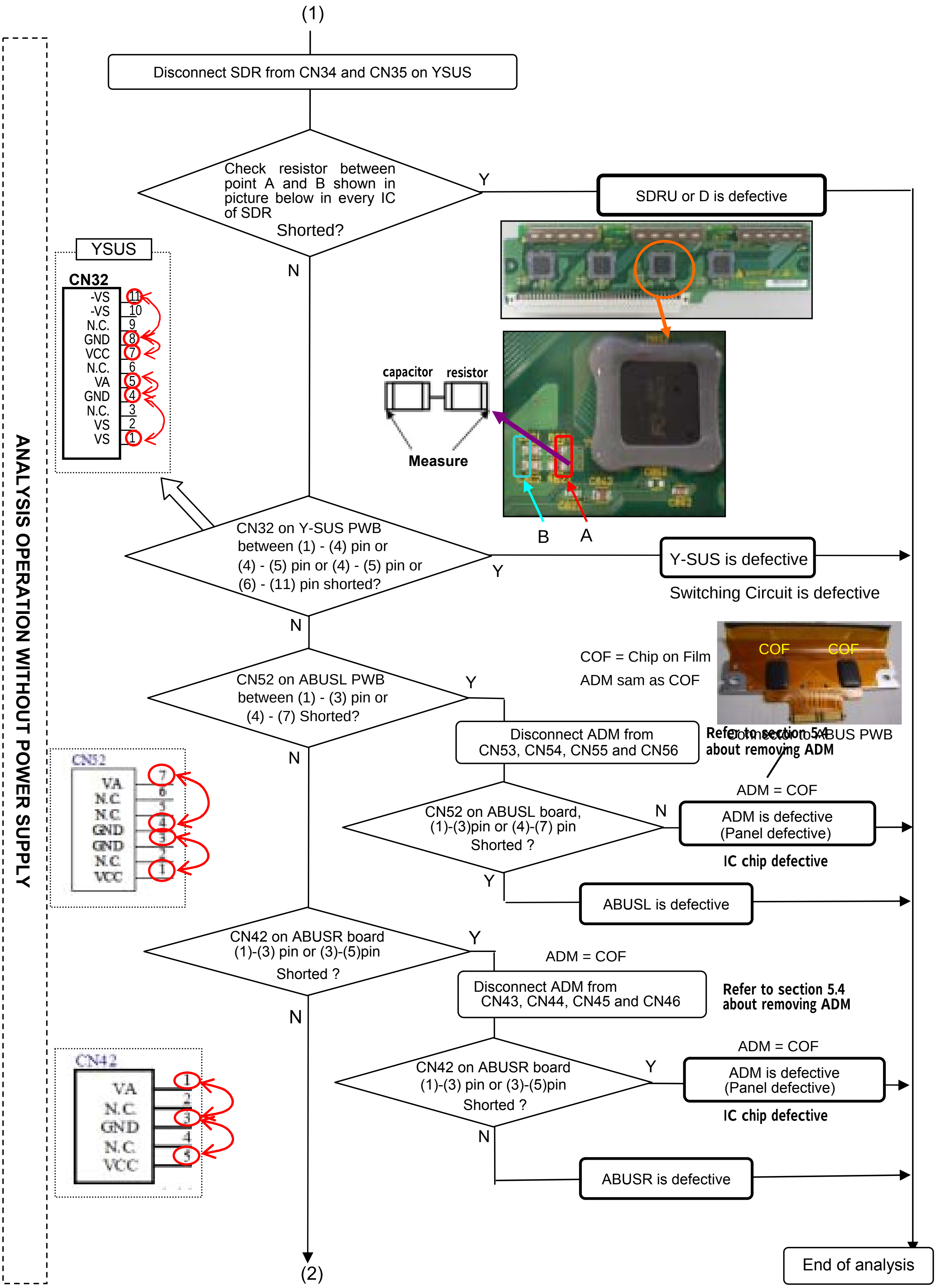
TROUBLESHOOTING THE 42AE1 PANEL:

4.6 PROBLEM ANALYSIS PROCEDURE

4.6.1 "The entire screen does not light (No Picture)" analysis procedure

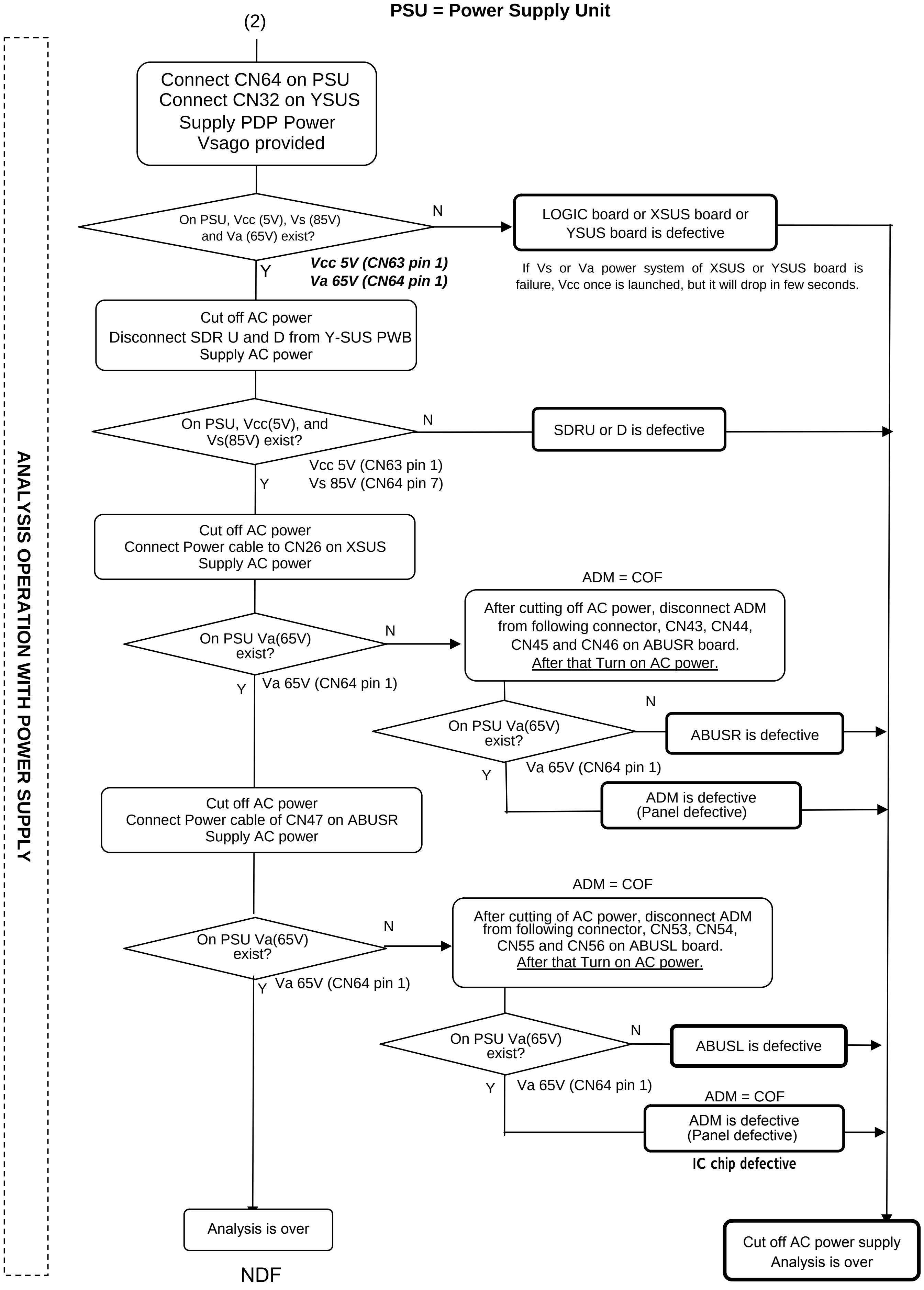

The entire screen does not light.
"No Picture"
Main Power Off
Y
PSU = Power Supply Unit
Disconnect CN68 on PSU, PSU to LOGIC cable
Turn on AC power.
Vcc (5V) on PSU board exists?
N
PSU board is defective.
STANDBY power supply has abnormality.
Y
CN63 pin 1
Turn off AC power
Connect CN68 on PSU
Turn on AC power
Vcc (5V) exists on PSU board?
N
LOGIC board is defective.
STANDBY power supply (MPU power supply) system has short-circuit.
Y
CN63 pin 1
Turn off the AC power.
Remove the following power connectors (four locations):
CN 23, CN24(X-SUS), CN 32 (Y-SUS), CN47 (ABUSR)
On X-SUS board
CN23 (3)-(4) pins or CN23 (5)-(7) pins or
CN22 (8)-(11) pins are shorted?
Y
X-SUS board is defective.
Switching circuit (power supply) has a short-circuit.
ANALYSIS OPERATION WITHOUT POWER SUPPLY
XSUS
CN22
-VS 11
-VS 10
N.C. 9
GND 8
VCC 7
N.C. 6
VA 5
GND 4
N.C. 3
VS 2
VS 1
CN23
-VS 9
N.C. 8
VS 7
N.C. 6
GND 5
GND 4
VCC 3
N.C. 2
Va 1
On XSUS board, CN63 (1)-(9) pin Shorted ?
Y
Disconnect 6 pcs of XFPC from CN24, CN62, CN63, CN64, CN65 and CN25
N
On XSUS board, CN63 (1)-(9) pin Shorted ?
Y
Remove XBUS U and D
N
On XSUS board, CN63 (1)-(9) pin Shorted ?
Y
XSUS is defective
N
XBUS is defective
Panel is defective
Turn off the AC power, End of analysis
(1)

TROUBLESHOOTING THE 42AE1 PANEL:


ANALYSIS OPERATION WITHOUT POWER SUPPLY
(1)
Disconnect SDR from CN34 and CN35 on YSUS
Check resistor between point A and B shown in picture below in every IC of SDR
Shorted?
Y
SDRU or D is defective
N
capacitor
resistor
Measure
B
A
YSUS
CN32
-VS 11
-VS 10
N.C. 9
GND 8
VCC 7
N.C. 6
VA 5
GND 4
N.C. 3
VS 2
VS 1
CN32 on Y-SUS PWB between (1) - (4) pin or (4) - (5) pin or (4) - (5) pin or (6) - (11) pin shorted?
Y
Y-SUS is defective
Switching Circuit is defective
N
COF = Chip on Film
ADM sam as COF
COF
COF
CN52 on ABUSL PWB between (1) - (3) pin or (4) - (7) Shorted?
Y
Disconnect ADM from CN53, CN54, CN55 and CN56
Refer to section 5.4 about removing ADM
Connector to ABUS PWB
ADM = COF
N
CN52
VA 7
N.C 6
N.C 5
GND 4
GND 3
N.C 2
VCC 1
CN52 on ABUSL board, (1)-(3)pin or (4)-(7) pin Shorted ?
N
ADM is defective (Panel defective)
IC chip defective
Y
ABUSL is defective
CN42 on ABUSR board (1)-(3) pin or (3)-(5)pin Shorted ?
Y
ADM = COF
Disconnect ADM from CN43, CN44, CN45 and CN46
Refer to section 5.4 about removing ADM
N
CN42
VA 1
N.C 2
GND 3
N.C 4
VCC 5
ADM = COF
CN42 on ABUSR board (1)-(3) pin or (3)-(5)pin Shorted ?
Y
ADM is defective (Panel defective)
IC chip defective
N
ABUSR is defective
(2)
End of analysis

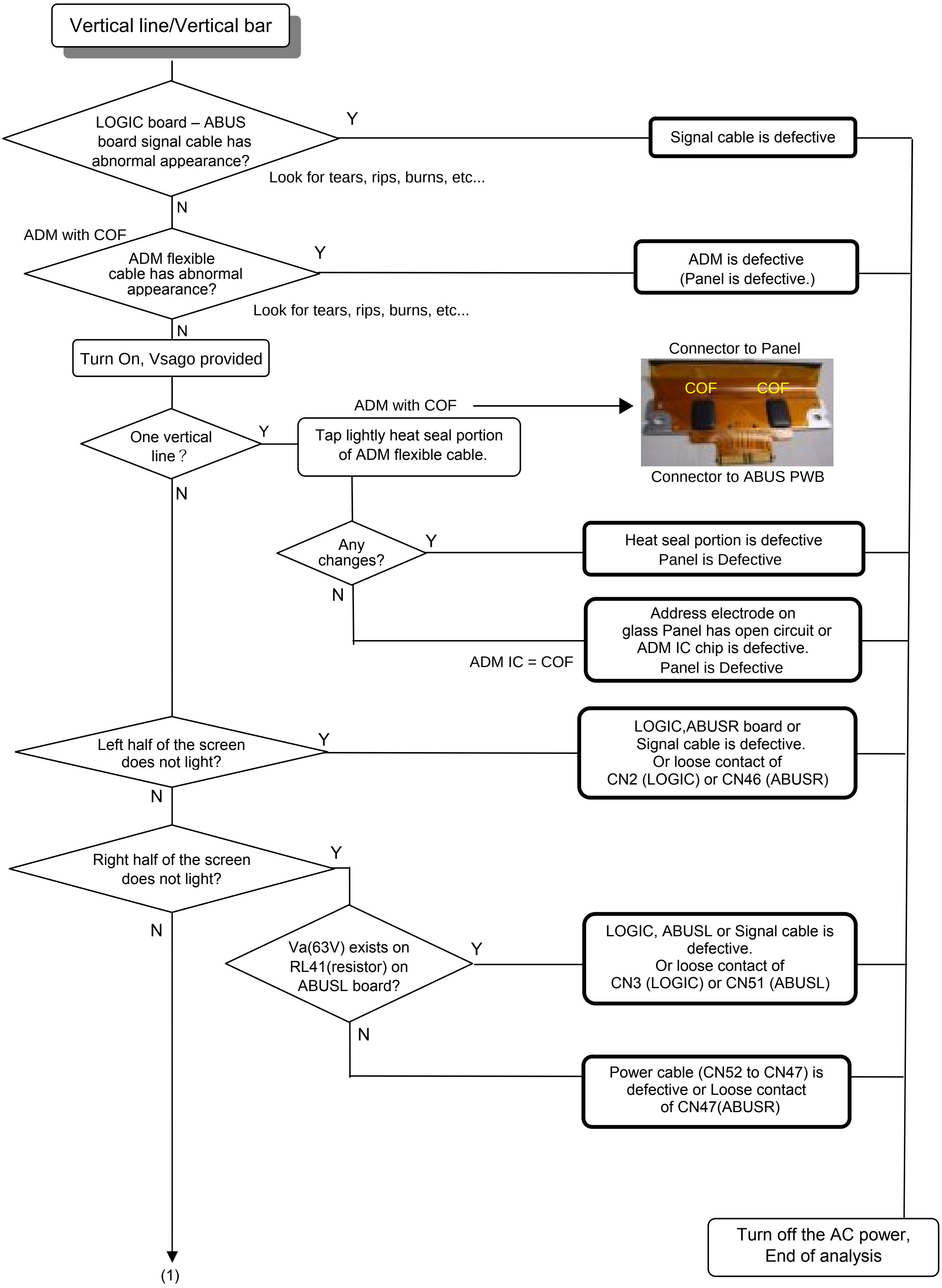
TROUBLESHOOTING THE 42AE1 PANEL:

PSU = Power Supply Unit

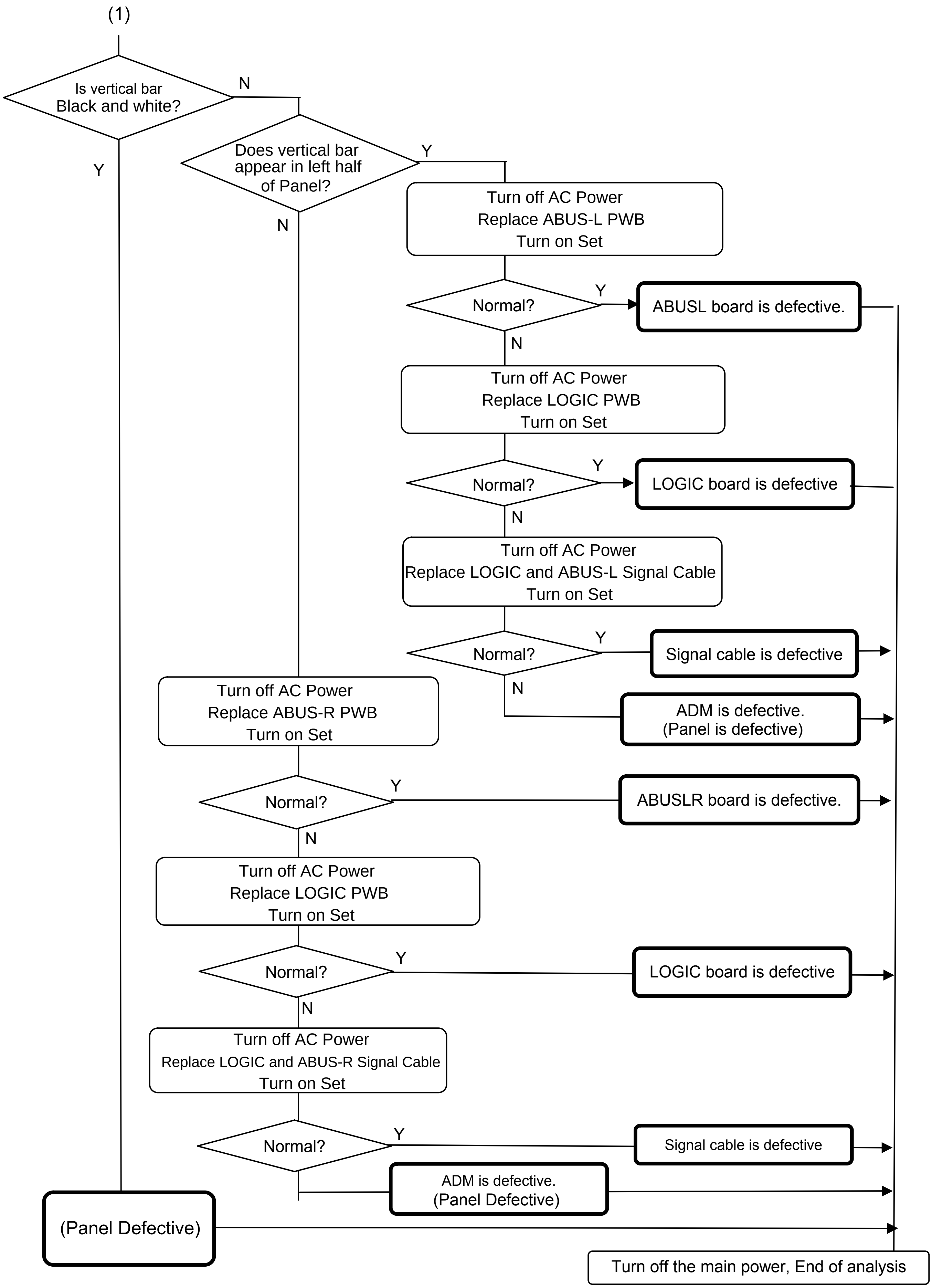

(2)
ANALYSIS OPERATION WITH POWER SUPPLY
Connect CN64 on PSU
Connect CN32 on YSUS
Supply PDP Power
Vsago provided
On PSU, Vcc (5V), Vs (85V) and Va (65V) exist?
N
LOGIC board or XSUS board or YSUS board is defective
If Vs or Va power system of XSUS or YSUS board is failure, Vcc once is launched, but it will drop in few seconds.
Y
Vcc 5V (CN63 pin 1)
Va 65V (CN64 pin 1)
Cut off AC power
Disconnect SDR U and D from Y-SUS PWB
Supply AC power
On PSU, Vcc(5V), and Vs(85V) exist?
N
SDRU or D is defective
Y
Vcc 5V (CN63 pin 1)
Vs 85V (CN64 pin 7)
Cut off AC power
Connect Power cable to CN26 on XSUS
Supply AC power
ADM = COF
On PSU Va(65V) exist?
N
After cutting off AC power, disconnect ADM from following connector, CN43, CN44, CN45 and CN46 on ABUSR board.
After that Turn on AC power.
Y
Va 65V (CN64 pin 1)
On PSU Va(65V) exist?
N
ABUSR is defective
Y
Va 65V (CN64 pin 1)
ADM is defective
(Panel defective)
Cut off AC power
Connect Power cable of CN47 on ABUSR
Supply AC power
ADM = COF
On PSU Va(65V) exist?
N
After cutting of AC power, disconnect ADM from following connector, CN53, CN54, CN55 and CN56 on ABUSL board.
After that Turn on AC power.
Y
Va 65V (CN64 pin 1)
On PSU Va(65V) exist?
N
ABUSL is defective
Y
Va 65V (CN64 pin 1)
ADM = COF
ADM is defective
(Panel defective)
IC chip defective
Analysis is over
NDF
Cut off AC power supply
Analysis is over

TROUBLESHOOTING THE 42AE1 PANEL:

4.6.2 "Vertical line/Vertical bar" Problem analysis procedure

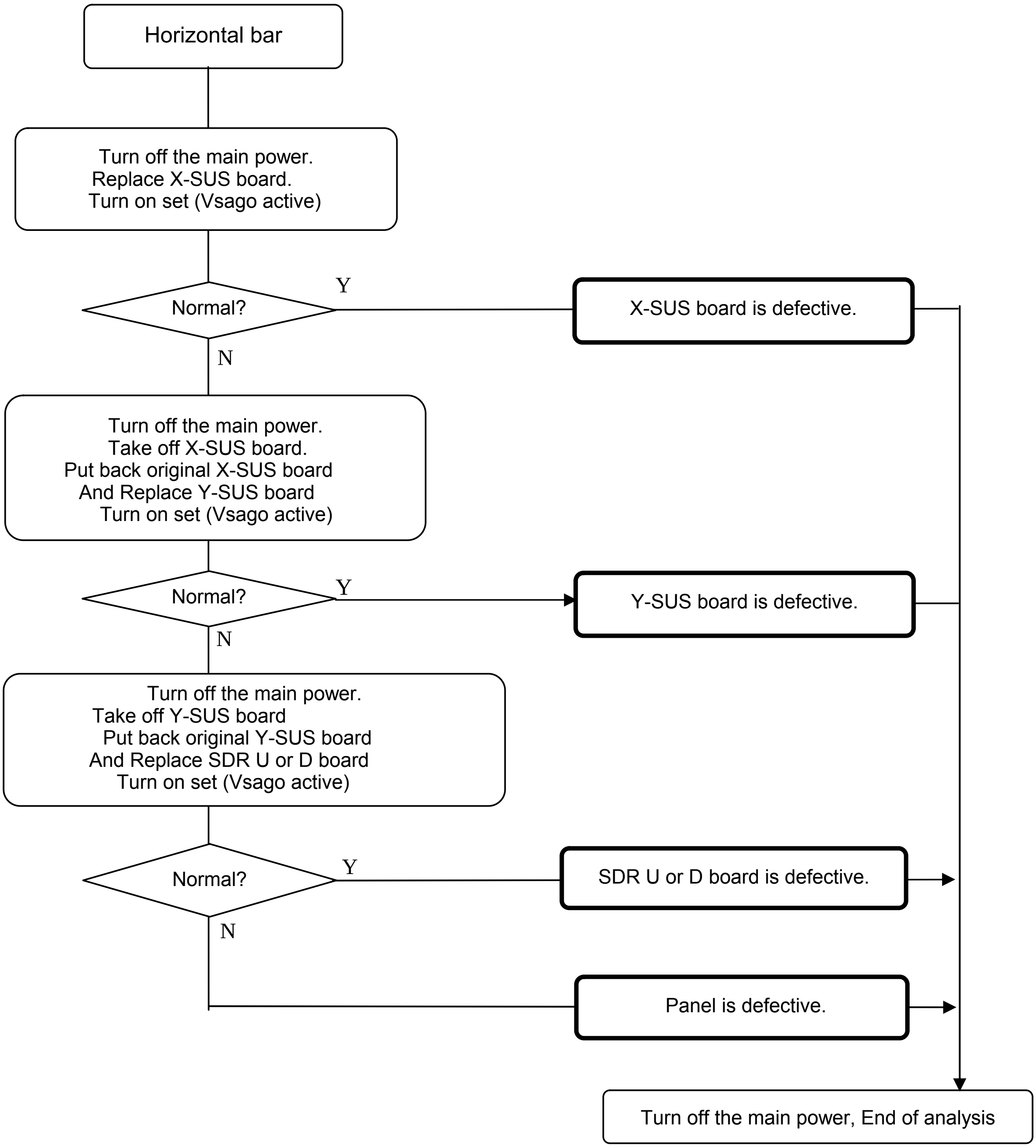

Vertical line/Vertical bar
LOGIC board – ABUS board signal cable has abnormal appearance?
Y
Signal cable is defective
Look for tears, rips, burns, etc...
N
ADM with COF
ADM flexible cable has abnormal appearance?
Y
ADM is defective (Panel is defective.)
Look for tears, rips, burns, etc...
N
Turn On, Vsago provided
Connector to Panel
COF
COF
Connector to ABUS PWB
ADM with COF
One vertical line？
Y
Tap lightly heat seal portion of ADM flexible cable.
N
Any changes?
Y
Heat seal portion is defective Panel is Defective
N
Address electrode on glass Panel has open circuit or ADM IC chip is defective. Panel is Defective
ADM IC = COF
Left half of the screen does not light?
Y
LOGIC,ABUSR board or Signal cable is defective. Or loose contact of CN2 (LOGIC) or CN46 (ABUSR)
N
Right half of the screen does not light?
Y
Va(63V) exists on RL41(resistor) on ABUSL board?
Y
LOGIC, ABUSL or Signal cable is defective. Or loose contact of CN3 (LOGIC) or CN51 (ABUSL)
N
Power cable (CN52 to CN47) is defective or Loose contact of CN47(ABUSR)
N
Turn off the AC power, End of analysis
(1)

TROUBLESHOOTING THE 42AE1 PANEL:


(1)
Is vertical bar Black and white?
N
Y
Does vertical bar appear in left half of Panel?
Y
N
Turn off AC Power
Replace ABUS-L PWB
Turn on Set
Normal?
Y
ABUSL board is defective.
N
Turn off AC Power
Replace LOGIC PWB
Turn on Set
Normal?
Y
LOGIC board is defective
N
Turn off AC Power
Replace LOGIC and ABUS-L Signal Cable
Turn on Set
Normal?
Y
Signal cable is defective
N
ADM is defective. (Panel is defective)
Turn off AC Power
Replace ABUS-R PWB
Turn on Set
Normal?
Y
ABUSLR board is defective.
N
Turn off AC Power
Replace LOGIC PWB
Turn on Set
Normal?
Y
LOGIC board is defective
N
Turn off AC Power
Replace LOGIC and ABUS-R Signal Cable
Turn on Set
Normal?
Y
Signal cable is defective
ADM is defective. (Panel Defective)
(Panel Defective)
Turn off the main power, End of analysis

TROUBLESHOOTING THE 42AE1 PANEL:

4.6.3 "Horizontal bar" Problem analysis procedure


Horizontal bar
Turn off the main power.
Replace X-SUS board.
Turn on set (Vsago active)
Normal?
Y
N
X-SUS board is defective.
Turn off the main power.
Take off X-SUS board.
Put back original X-SUS board
And Replace Y-SUS board
Turn on set (Vsago active)
Normal?
Y
N
Y-SUS board is defective.
Turn off the main power.
Take off Y-SUS board
Put back original Y-SUS board
And Replace SDR U or D board
Turn on set (Vsago active)
Normal?
Y
N
SDR U or D board is defective.
Panel is defective.
Turn off the main power, End of analysis

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